QMS® 4060 Print System Options

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1

Memory and Storage

In This Chapter . . .

- "Single In-Line Memory Modules" on page 1-2
- "Hard Disk Storage Options" on page 1-2

Introduction

This chapter discusses memory and storage options available for use with your QMS 4060 Printer.

Single In-Line Memory Modules

Single in-line memory modules (or SIMMs) are compact circuit boards with surface-mount memory chips. The QMS 4060 Print System base model is standard with two 16 MB SIMMs. However, it is possible to add up to a total of 128 MB of RAM. The memory system on the printer uses interleaved memory mapping. Because of this, new SIMMs must be installed in matching pairs.

Additional printer memory allows you to download more fonts and increase the printer's buffer (area where data sent from the computer is stored while it's waiting to be printed).

QMS requires that only QMS-certified service technicians install memory upgrades to your QMS 4060 Print System. See appendix A, "QMS Customer Support," for information on how to contact QMS National Field Service.

Hard Disk Storage Options

Hard disks provide true virtual memory as well as storage for character bitmaps, downloaded outline fonts, and other files.

About Internal Hard Disks

Your QMS 4060 Print System includes an internal IDE hard disk. This disk is used for storing system software, downloaded fonts, softloadable emulations, and spooling from the host computer.

External SCSI Hard Disks

For information on installing your external hard disk, see the documentation that comes with your hard disk.

» **Note:** *See FAQ 7181 for a list of approved hard disks, their manufacturers and part numbers, and the QMS products on which they can be used. You can access QMS FAQs through the Internet at http://www.qms.com/support/supportbase/ or through Q-FAX. (See appendix A, "QMS Customer Support," to find out how to access Q-FAX documents).*

FAQ numbers are subject to change, so yo may want to obtain a directory of Q-FAX documents before requesting a specific document.

Identifying Hard Disks

The hard disks are identified by their device numbers. The internal hard disk attached has a device number of DSK7. If optional external hard disks are attached to the printer, their device numbers can range from DSK0 to DSK6. (DSK5 which translates to SCSI ID 5 is reserved for the scanner). Device numbers of external disks can be set on the back of the hard disk by the installer.

▲ **Caution**: *If you connect to this printer an external hard disk you previously used with an earlier QMS Crown printer (1660E, QMS 1725E, QMS 2025, or QMS 3225), this QMS 4060 Print System software release will automatically reorganize the files on the hard disk when the printer is turned back on again. (The printer release number is listed on both the start-up and the status page.) Once this reorganization is done, the files on the hard disk can no longer be accessed if the hard disk is reattached to an earlier QMS Crown printer.*

This reorganization process takes time. If, when you first turn the printer on after attaching a previously used hard disk, it does not come on line immediately, be patient. Interrupting the reorganization process could cause all files on the hard disk to be lost.

Turning on an External Hard Disk

For the printer to recognize one or more external hard disks, each hard disk must be turned on before you turn on the printer. If the printer recognizes the disk(s) and the start-up page is enabled, check to ensure that `DISK ONLINE` prints on that page. If the start-up page is not enabled, print a status page and check to see if `DISK ONLINE` prints on that page. (See chapter 4, “Printer Configuration,” of the *Reference* manual, for information on how to print a status page.)

If `DISK ONLINE` does not print, see the *Operation* guide, chapter 9, the “Internal Hard Disk Problems” section, for more information.

Properly installed disks will also appear in the “Options” section, of the start-up page (if it’s enabled) and on the status page as %%`disk`*x*% (where *x* is a 7 for an internal IDE hard disk and 0 - 6 (SCSI ID 5 is reserved for the scanner) for any external SCSI hard disks, depending on the SCSI ID set on the back of the hard disk.

Configuring Hard Disks

To configure the hard disk(s) you may need to either Enable Disk Swap or increase the Disk Cache size, dependent on your printer's memory.

After the Administration/Memory/Enable Disk Swap or Administration/Memory/Disk Cache menu settings are reconfigured and the printer is restarted, you need to print a status page to check that the Disk Cache size is increased. (Notice that `VM remaining` memory is also increased.)

Using the Disk Operations Menu

The Administration/Disk Operations menu contains all of the options you need to format a hard disk.

Error Messages

The following two messages may appear while you are using the Disk Operations menu.

Message	Meaning	Action
`FORMAT FAILED`	The hard disk cannot be used.	Press the Menu key to remove the message, and contact your QMS vendor.
`WRITE ERROR`	The hard disk encountered a write error, or there is no room for the data on the hard disk or in RAM.	Press the Menu key to remove the message, and restart the operation from the beginning.

Formatting a Hard Disk

You have three ways of formatting a hard disk:

- Printer configuration menu
- CrownAdmin

- Remote Console

Using the Printer Configuration Menu

After you have accessed the Administration/Disk Operations menu, press the control panel keys in the order shown in the following table. The printer responds by displaying a status message in the message window (DSK refers to the hard disk,# is the hard disk number).

▲ ***Caution:*** *Do not format the internal hard disk. It is identified by SCSI address #7 or DSK#7. The hard disk contains all of the system code for the printer.*

» **Note:** *You may need to press the Next key one or more times to advance through the list of selections or options.*

Press this key ...	to ...	and the message window reads ...
Select	Access the Disk Operations/ Format Disk menu	FORMAT DISK
Select	Access the Format Disk/Dsk#: menu.	DSK#:
Next or Previous	Advance through the list of attached disks.	DSK#:
Select	Select the disk and display a format confirmation message.	ARE YOU SURE?
Select	Begin the formatting process. While the system reboots, the hard disk is being formatted.	FORMATTING...

Using CrownAdmin

See the *QMS CrownNet System Administrator's Guide* on the *QMS Software Utilities* CD-ROM or the online help for CrownAdmin for information on how to format an external hard disk.

Using Remote Console

See “Formatting a Hard Disk” in the “Disk Operation Commands” section of chapter 6, “Local and Remote Console,” of the Operations manual for instructions on formatting a hard disk using a remote console.

Backing Up Data to a Jaz or Zip Drive

» *Note: You cannot back up data to an internal or external hard disk.*

Attach Jaz or Zip drive to which you’ll be backing up data to the printer’s SCSI port or SCSI chain. Then access the Administration/ Disk Operations menu, and then press the control panel keys in the order shown in the following table. The printer responds by displaying a status message in the message window (DSK refers to the device, and # is the device number).

» *Note: You may need to press the Next key one or more times to advance through the list of selections or options.*

Press this key...	to...	and the message window reads...
Next	Advance to the Disk Operations/ Backup Hard Disk menu	`DISK OPERATIONS` `BACKUP HARD DISK`
Select	Access the Backup Hard Disk/Dsk#: menu.	`BACKUP HARD DISK` `DSK#`*x*
Next or Previous	Advance through the list of attached devices.	`BACKUP HARD DISK` `DSK#`*x*
Select	Access the DSK#*x*/Full menu.	`DSK#`*x* `FULL`
Next (optional)	Access the DSK#*x*/Incremental menu.	`DSK#`*x* `INCREMENTAL`

Press this key...	to...	and the message window reads...
Select	Begin the backup process. The printer creates a Backup directory on the Jaz or Zip drive to which you're backing data up and stores the data in that directory. *If the drive has not already been formatted, the printer automatically formats it.* *If the drive already has a Backup directory, the new backed up data overwrites the data in that directory.*	`COPYING DATA`
	If the backup requires more than one Jaz or Zip drive, the message display prompts you. Be sure to number the drives since the restore process requires you to use them in the proper sequence.	`INSERT MEDIA` *x* (*x* is the disk number)
	You're prompted when the backup process has finished.	`BACKUP COMPLETE`
Menu (several times)	Exit from the configuration menu.	`CONFIGURATION ADMINISTRATION`
Online	Put the printer back on line.	`IDLE`

Error Messages

The following error messages may appear while you are using the Disk Operations menu:

Message	Meaning	Action
`WRITE PROTECT`	The drive is write-protected.	Remove the drive's write protection.

Restoring Data from a Jaz or Zip Drive

Attach the Jaz or Zip drive from which you'll be backing up data to the printer's SCSI port or SCSI chain. Then access the Administration/ Disk Operations menu, and then press the control panel keys in the order shown in the following table. The printer responds by displaying a status message in the message window (DSK refers to the device, and # is the device number).

» *Note: You may need to press the Next key one or more times to advance through the list of selections or options.*

Press this key...	**to...**	**and the message window reads...**
Next	Advance to the Disk Operations/ Restore Disk menu	`DISK OPERATIONS` `RESTORE DISK`
Select	Access the Restore Disk/Dsk#: menu.	`RESTORE DISK` `DSK#`*x*
Next or Previous	Advance through the list of attached devices.	`RESTORE DISK` `DSK#`*x*
Select	Begin the restore process.	`COPYING DATA`
	If the original backup required more than one Jaz or Zip drive, the message display prompts you. Be sure to insert the drives in the proper sequence.	`INSERT MEDIA` *x* (*x* is the disk number)
	You're prompted when the backup process has finished.	`RESTORE COMPLETE`
Menu (several times)	Exit from the configuration menu.	`CONFIGURATION` `ADMINISTRATION`
Online	Put the printer back on line.	`IDLE`

Error Messages

The following error message may appear while you're using the Disk Operations menu:

Message	Meaning	Action
SEQUENTIAL ERROR	The backup drives have been inserted in the wrong sequence.	Remove the drive and insert the correct one.

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Optional Fonts

In This Chapter . . .

- “Optional Fonts” on page 2
- “Downloading Disk Fonts” on page 2
- “Kanji SIMM Kit” on page 3
- “ProCollection Font SIMM” on page 8

Optional Fonts

The following types of optional fonts are available for the QMS 4060 Print System:

- A disk containing typefaces (fonts) such as the ProCollection for the HP emulations on your printer or other special fonts.
- A Kanji Option Kit that contains the Kanji SIMM.
- A SIMM containing 65 ProCollection fonts for the HP emulation on your printer.

Downloading Disk Fonts

Optional typefaces (fonts), such as the ProCollection for the HP emulations on your printer and other special PostScript fonts, are available as PostScript files on floppy disks for your PC. See your QMS vendor for the available optional fonts. This section describes how to download an optional font from the floppy disk to the printer's hard disk.

» **Note:** *At least one optional hard disk (internal or external) must be installed on the printer before you can download a font. If more than one hard disk is available, the font automatically installs itself on the disk with the most free storage space.*

Once a font is downloaded, the only way to remove it is to reformat the hard disk (Administration/Disk Operations/Format Disk menu).

Procedure

This procedure contains the instructions for downloading the fonts from a floppy disk onto your hard disk.

1 **If necessary connect the PC to the printer's parallel or serial port.**

2 **Turn on the printer, and wait for `IDLE` to appear in the message window.**

3 **Insert the emulation disk in your PC's 3.5" disk drive, and change to that drive (for example, if you're using the A drive, type a:↵).**

4 **Send the emulation to the printer's hard disk.**

- If your PC and printer are connected through the parallel port, type

  ```
  copy /b *.ps lpt#↵
  ```

  where # is 1 to 3. (/b refers to binary files.)

- If your PC and printer are connected through the optional serial port, type

  ```
  copy /b *.ps com#
  ```

  where # is 1 to 4. (/b refers to binary files.)

5 **When the downloading is complete, reboot the printer.**

Kanji SIMM Kit

The QMS Kanji SIMM Kit contains a Kanji SIMM with Kanji fonts and other files. These fonts can be printed at a variety of point sizes and in different styles and resolutions.

Once the SIMM is installed on your QMS 4060 Print System, the Kanji fonts are available for use just as if they were resident in the printer.

What's in the Kit?

Your Kanji SIMM kit contains the following items:

- One anti-static wristband
- One Kanji SIMM with the following 2 Kanji fonts:

This Font	Licensed to QMS by...
Ryumin Light-KL Gothic BBB-Medium	Morisawa and Company, Ltd.

If anything is missing, call your QMS vendor. See appendix A, "QMS Customer Support," for locations and telephone numbers.

Hardware Requirements

To use your QMS Kanji SIMM fonts, you need

- A QMS Kanji SIMM Kit
- Minimum of 32 MB memory
- A Macintosh, IBM PC, or compatible computer with a Kanji operating system and a Kanji application. See the following section for software requirements.

Software Requirements

To use the QMS Kanji SIMM fonts, you need an application (such as a word processing or desktop publish package) that supports both the Kanji fonts and PostScript printing:

The following system software is also required:

Macintosh System Software

- KanjiTalk, version 1-6.0.7 or later
- System File, version 1-6.0.7 or later
- Laser Prep, version 1-6.0.1 or later
- LaserWriter, version 1-6.0.2 or later

- Print Monitor, version 1-1.3 or later
- MultiFinder, version 1-6.1.7 or later

PC System Software

- If you're using Windows, version 3.1 or later
- If you're using DOS, version 5.0 or later

The Installation Procedure

QMS requires that only QMS certified service technicians install the Kanji SIMM on your QMS 4060 Print System. See appendix A, "QMS Customer Support," for information on how to contact QMS National Field Service.

Accessing the Kanji Fonts

After installation of the Kanji SIMM and configuration of the printer, you are ready to access the Kanji fonts. From the list of sections below, locate the section that matches your printer environment, and follow the instructions to access the Kanji fonts.

- "If You are Using a Macintosh" on page 5
- "If You are Using Windows" on page 7
- "If You are Using DOS" on page 7

If You are Using a Macintosh

For your Macintosh system, you will need to install the bitmapped screen fonts and Kanji APD and PPD files. The bitmapped screen fonts display an image of how a printed typeface looks, and they also provide metrics information used by the application to determine which outline font to used when formatting text.

Install the Screen Fonts

Install the bitmapped screen fonts from the floppy disk to your Macintosh as follows:

» **Note:** *Make sure that the bitmapped screen fonts disk is copied only to the KanjiTalk System Folder. If bitmapped fonts are installed in another folder, they will not appear in your application.*

1 **Insert the bitmapped screen fonts disk into the Macintosh computer's disk drive.**

2 **If you are using System 6, install the fonts using normal Macintosh procedures for Font/DA Mover.**

If you are using System 7 or System 8, select the fonts from the floppy disk and drag the fonts to the Fonts folder in the System folder.

3 **Restart your Macintosh.**

Add the Printer Description File

Most Macintosh applications obtain font information from the printer. But applications such as Adobe Separator, QuarkXPress, and Aldus PageMaker, refer to the font list of the PPD file for font information.

1 **Replace the APD and PPD files you installed when you purchased your QMS printer.**

Follow the instructions in your application documentation or in your printer user's guide "Printer Description Files" section.

Download the JFontPrep File

When downloading Adobe Type Library or Morisawa Type Library Kanji fonts, you need to also download the JFontPrep file.

1 **Access the Administration/Emulation/PostScript/Emulation Level and select Level 2.**

See chapter 4, "Printer Configuration," in the *Reference* manual for detailed printer configuration information.

2 **Open PS Exec on your computer.**

3 **From the File menu, choose Download PS File.**

4 **Choose JFontPrep, click Send, and then download to the printer.**

» **Note:** *The JFontPrep PostScript file is automatically downloaded to RAM. The Japanese PostScript fonts are downloaded to disk.*

5 **When the Status window is gone, close PS Exec.**

6 **Download the font(s). See the *Adobe Type Library User's Guide* for instructions on downloading fonts.**

▲ **Caution:** *Do not select Clear Font Cache in the Disk menu even though the Adobe/Morisawa Type Library User's Guide states that you should select this option, it could cause your printer to lock up.*

7 **After downloading the fonts, if necessary, reset Emulation Level to its initial value.**

8 **Turn the printer off and then back on again.**

If You are Using Windows

Make sure that you have the correct version of the system software for running Kanji. Install the QMS Windows driver using the instructions given in the README.TXT file on the Windows Drivers disk.

If You are Using DOS

To run a Japanese application in the DOS environment, you need MS-DOS/V 5.0J. Most major Japanese word processing applications are available for the DOS/V environment.

» **Note:** *Not all Japanese applications for the DOS/V environment support PostScript printing.*

ProCollection Font SIMM

The QMS ProCollection SIMM Kit contains a ProCollection SIMM with 65 ProCollection fonts and other files.

Once the SIMM is installed on your QMS 4060 Print System, the ProCollection fonts are available for use just as if they were resident in the printer.

The Installation Procedure

QMS requires that only QMS-certified service technicians install the ProCollection SIMM on your QMS 4060 Print System. See appendix A, “QMS Customer Support,” for information on how to contact QMS National Field Service.

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Optional Interfaces

In This Chapter . . .

- “Optional Network Interface” on page 3-2
- “Optional LocalTalk Interface” on page 3-4
- “Using the Optional LocalTalk Interface” on page 3-5
- “Optional Serial Interface” on page 3-16

Optional Network Interface

In addition to the two standard interfaces (CrownNet for Ethernet and Centronics/IEEE 1284 parallel) your printer supports optional interfaces such as DECnet-TCP/IP, IBM 3270/5250A, and Token-Ring. Additional interface options allow greater flexibility when working in a complex network environment.

» **Note:** *The LocalTalk network or single Macintosh interface information is contained in the "Using the Optional LocalTalk Interface" section, and the serial interface information is contained in the "Optional Serial Interface" on page 3-16, later in this chapter.*

An optional network interface may be installed in the optional interface opening on the back of the printer. This opening is to the left of the other interface ports and it is covered with a rectangular metal plate.

The printer's simultaneous interface operation (SIO) allows the optional interfaces to be active at the same time as the other ports. In other words, your printer can communicate through up to five ports with five host computers or computer networks. One host can interface through the parallel port, one through the optional serial port, one through the Ethernet port, and one through the optional interface port. See your QMS vendor for a list of available optional network interfaces available.

Optional Network Interface Assembly Kit

The optional network interface assembly kit includes the following:

- A network interface card (NIC)
- Network interface documentation

The kit may also include additional parts not required for network interface installation on this printer.

Installing an Optional Network Interface

QMS requires that only QMS-certified service technicians install the optional network interface on your QMS 4060 Print System. See appendix A, “QMS Customer Support,” for information on how to contact QMS National Field Service.

Using an Optional Network Interface

Once an optional network interface is installed, refer to the following for more information:

- Chapter 4, “Connecting to an Ethernet Network,” in the *Getting Started* manual provides information on connecting to the network, installing the software, and configuring the interface and the network. Chapter 2, “Printer Configuration,” of *QMS CrownNet Interface System Administrator’s Guide (on the QMS Software Utilities CD-ROM)*, provides information on setting the Ethernet interface parameters. Chapter 5,“Additional Technical Information,” of the *Reference* manual contains a full discussion of the PS Protocol option that appears in the Administration/Communications/CrownNet menu.
- The documentation provided with the optional network interface contains information about all other options in the new network interface menu as well as instructions for connecting the printer to the network and for printing over the network.
- Your application and network documentation contain information on printing over the network.

Setting Optional Interface Parameters

If you install an optional network interface such as Ethernet or Token-Ring, the appropriate interface and its options will be listed in the Administration/Communications/CrownNet menu. The documentation

provided with the interface contains complete configuration information.

Optional LocalTalk Interface

In addition to the two standard interfaces—parallel and Ethernet—the QMS 4060 Print System supports an optional Ethernet network, Token-Ring network, LocalTalk network, or a single Macintosh interface.

An optional interface may be installed in the optional interface opening on the back of the printer. This opening is to the left of the other interface ports and it is covered with a rectangular metal plate.

Optional LocalTalk Interface Assembly Kit

The optional network interface assembly kit includes the following:

- A LocalTalk interface card
- LocalTalk interface notice

The kit may also include additional parts not required for interface installation on this printer.

Installing an Optional LocalTalk Interface

QMS requires that only QMS-certified service technicians install the optional LocalTalk interface on your QMS 4060 Print System. See appendix A,“QMS Customer Support,” for information on how to contact QMS National Field Service.

Using the Optional LocalTalk Interface

Connecting to the optional LocalTalk interface involves basically three steps: assembling the proper interface cabling (use a LocalTalk-type kit such as Netopia PhoneNET, available from your QMS vendor), making the connection, and making sure the necessary printing files are installed on the Macintosh.

The optional LocalTalk interface is used to print if

- Your host is any member of the Apple Macintosh family. The instructions in this chapter explain how to connect a Macintosh (via either a direct connection or through a LocalTalk network connection) to the QMS 4060 Print System.
- Your host is an IBM PC or compatible microcomputer, workstation, minicomputer, or mainframe computer that connects through a print network (such as AppleShare) using LocalTalk-type connectors and boxes.

  If you're connecting to a host such as these, you may need additional hardware or software. See your host or network documentation for details specific to your setup.

Interface

Interface is the point at which two elements connect so they can work together. Printer-host interface is the way a printer connects to and works with a host (for example, a microcomputer, minicomputer, mainframe computer, or a network), and it involves both hardware and software. The way your printer interfaces with a host depends on many things, including host type, host ports available, interface cabling, application software, printer emulations, and printer drivers.

Macintosh Interface Cabling

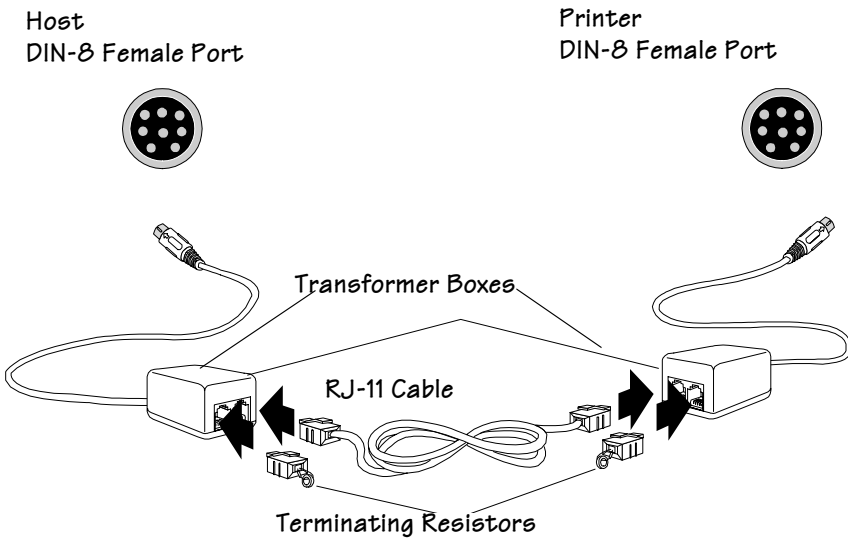
To connect your printer to a single Macintosh, you must have

- Two PhoneNET-type transformer boxes: one with a DIN-8 connector for the printer port and one with a DIN-8 connector for the Macintosh port
- An RJ11 (telephone) cable
- Two terminating resistors to close the open sockets left in the transformer boxes after the connection is made

» **Note:** *For cable pinout information check the "Cable Pinouts" section of appendix B in the Reference manual.*

If you're replacing a printer already connected to a Macintosh, you probably already have this equipment.

If you're connecting the printer to an AppleTalk network with more than one Macintosh, see your PhoneNET and Macintosh documentation for more information.



Making the Connection

Use the following procedure to connect your printer to the Macintosh.

▲ **Caution:** *Turn off both the printer and the Macintosh before making the connection.*

1. **Plug the connector from one transformer box into the printer's LocalTalk port.**
2. **Plug the connector from the other transformer box into the Macintosh printer port.**
3. **Connect the two transformer boxes with the telephone cable.**
4. **Put terminating resistors in all open sockets in the connector boxes.**

   This ensures proper communication and helps speed up transmission.

5. **Turn on the printer.**

   A start-up page should print if it has not been disabled.

Macintosh Printing Software

If you're replacing a PostScript printer, you can probably start printing now with the printing software already in place. Refer to your application documentation for instructions on sending documents to the printer.

However, if you want to be able to use all your printer's special features or if you've never printed to a PostScript printer before, we recommend you take a few minutes to make sure you have the following printing software installed:

- QMS Macintosh Utilities
- The 4060 PPD file
- Application-specific printer files

Installing Macintosh Utilities

QMS Macintosh Utilities are utilities for controlling the printer from the Macintosh. It is included on the *QMS Software Utilities* CD-ROM shipped with your printer.

1 **With the Macintosh on, insert the *QMS Software Utilities* CD-ROM in your Macintosh's CD-ROM drive.**

2 **If necessary, double-click the CD-ROM icon to display the CD-ROM contents.**

3 **Double-click the PLATFORM folder icon to display the folder contents.**

4 **Double-click the MAC folder icon to display the folder contents.**

5 **Double-click the UTILS folder icon to display the folder contents.**

6 **Double-click the UTILS installer icon.**

7 In the dialog box that appears, verify the Install location.

To change the Install Location you can either use the drop-down list box to display and select the appropriate disk, or you can choose the Switch Disk button to scroll through the available disks.

8 Also in the dialog box, choose Easy Install or Custom Install.

- **Easy Install** automatically installs all of the utilities, including the PDF, PDX, and PPD files and the screen fonts.
- **Custom Install** allows you to choose the options you want to install. The amount of available space on your Macintosh hard disk and the amount of space necessary for all of the selected options are indicated near the bottom of the window.

» **Note:** *If you're using Custom Install, you can click the small icon (it looks like a capital I inside a square) to the right of each install option for more information about that option.*

9 Choose the Install button to begin.

Installation takes approximately one minute. The Installer places all of the options inside a newly created PSExec f folder in the location you chose in step 7.

10 When the installation is finished, you're prompted to choose either Continue to install additional options from the Custom installation option or Quit to exit the Utils installer program.

Installing the 4060 4.x PPD

The QMS 4060 Print System 4.x PPD (a printer description file) allows you to take advantage of printer-features like multiple-resolution printing and collation that are not available through LaserWriter 8.*x* alone.

» **Note:** *If you have problems printing with LaserWriter 8.x, reinstall the LaserWriter 7.x driver that came with your Macintosh (if available), or call the QMS Customer Response Center (CRC). See appendix A, "QMS Customer Support," for a list of telephone numbers.*

1 If you haven't already, follow the instructions given above in "Installing Macintosh Utilities."

2 **If necessary, create a Printer Descriptions folder:**

System 7 users—Create a folder called Printer Descriptions inside the Extensions folder inside the System Folder.

System 6 users—Create a folder called Printer Descriptions inside the System Folder.

3 **Open the 4.x PPDs folder inside the PSExec 3.*xx f* Folder.**

4 **Select the QMS 4060 Print System PDF, and drag it to the Printer Descriptions folder.**

5 **From the Apple menu, choose Chooser.**

6 **In the Chooser window, select the LaserWriter 8.*x* icon and select QMS 4060.**

7 **Choose the Setup button.**

This causes the LaserWriter to query the printer and automatically choose the appropriate PPD.

8 **Exit from the Chooser.**

Now, when you open your application, you can access QMS printing options by choosing Options in your application's Print dialog box. Choose Help in the Options dialog box for information on these options.

Installing Application-Specific Printer Files

If you plan to print from Aldus or Adobe PageMaker, Aldus FreeHand, Aldus PrePrint, Adobe Separator, or QuarkXPress, you'll also want to install the latest printer description file (PPD, PDX, or PDF) for your particular software. You can probably print without this file, but you may not be able to access all of your printer's features, and you may get an error message telling you to change the printer name.

» **Note:** *The application (PageMaker, FreeHand, PrePrint, Separator, or QuarkXPress) should be installed before you install the printer description file(s).*

1 **If you haven't already, follow the instructions given above in "Installing Macintosh Utilities."**

2 Install the appropriate printer description file(s) for your application from 4.x PPDs, PDFs, or PDXs folder in the PSExec 3.*xx* folder:

- **If you use Adobe Separator,** install the PPD file. Your Separator documentation explains where to put it.
- **If you use QuarkXPress,** install the PDF in the same folder as QuarkXPress. Check your QuarkXPress documentation for details.
- **If you use Adobe PageMaker 5.*x*,** install the version 4.x PPD in the Printer Descriptions folder.
- **If you use Aldus PageMaker 4.*x*,** install the version 3.0 PPD and PDX files in the PPDs folder in the Aldus folder in the System Folder.
- **If you use Aldus FreeHand 4.*x*,** install the version 4.x PPD in the Printer Descriptions folder.
- **If you use Aldus FreeHand 3.*x*,** install the version 3.0 PPD and PDX files in the PPDs folder in the Aldus folder in the System Folder.

» **Note:** *Version 3 PPDs are not installed automatically through the PS Exec Easy Install procedure. You must use the Custom Install procedure. Refer to the PS Exec installation instructions at the very beginning of this section.*

- **If you use Aldus PrePrint,** install the version 3.0 PPD and PDX files in the PPDs folder in the Aldus folder in the System Folder.

» **Note:** *Version 3 PPDs are not installed automatically through the PS Exec Easy Install procedure. You must use the Custom Install procedure. Refer to the PS Exec installation instructions at the very beginning of this section.*

- **If you use QuarkXPress**, install the 4060 PDFs in the same folder as QuarkXPress. While Quark-XPress 3.3 allows you to access either PDFs or PPDs. To select the PDFs, go to the Page Setup dialog box in QuarkXPress, and hold down the Shift key while clicking the Printer Type list box. (The italicized

selections are PPDs, and the non-italicized selections are PDFs.) See your QuarkXPress documentation for more information.

Testing Macintosh Communication

You can check communication between the printer selected in the Chooser and the Macintosh by sending a file to the printer from an application (see your application documentation for more information) or by printing a directory, as described here:

1 Display a disk or folder window.

2 Set up page information.

Choose Page Setup from the File menu. Select paper size, printing orientation, and any other necessary options. Then select OK.

3 Print a directory or a window.

a Choose Print Directory or Print Window from the File menu. A dialog box appears.

b Select the printing options you want; then click OK. If no page prints, check chapter 9,"Troubleshooting Printer Problems," of the *Operation* guide.

Printing from the Macintosh

You're now ready to print from your Macintosh. From this point, you'll probably perform most printing tasks from your application. For specific information, check the printing section in your application documentation.

For information on print media types and sizes, see chapter 2, "Print Media," in the *Reference* guide.

A Note for Users of Aldus Applications

If you use an Aldus application (or one that used to be owned by Aldus, such as Adobe PageMaker or MacroMedia FreeHand), when you want to print, hold down the Option key while selecting Print from

the File menu. This brings up the LaserWriter windows, which contains the QMS printing options. Normally, Aldus applications bypass LaserWriter and use an Aldus printer driver, which prevents you from accessing QMS printing options.

A Note for Users of Adobe PhotoShop

If you use Adobe PhotoShop, go to PhotoShop's Page Setup dialog box, and select Use Printer's Default Screen under the Screens option. This allows your choices in the QMS driver to take effect.

Setting LocalTalk Interface Parameters

Use the Administration/Communications/LocalTalk menu to set the LocalTalk interface values used for printer-host communication.

Mode

Enables or disables the communication interface.

Menu	Administration/Communications/LocalTalk/Mode
Choices	Enabled—Establishes one-way LocalTalk communication from the host to the printer. Disabled—Turns off the LocalTalk interface, and the printer stops accepting LocalTalk interface print jobs.
Default	Enabled
Notes	The printer must be restarted for changes to the Mode menu to take effect. Changing the Mode setting will cause the `REBOOT NOW?` prompt to appear. Your can either choose to restart the printer now and this change takes effect immediately or you can manually restart the printer and have this change take effect later.

Min K Spool

Sets the minimum number of kilobytes of system memory allocated to theLocalTalk interface.

Menu	Administration/Communications/LocalTalk/Min K Spool
Choices	00000-99999
Default	00015
Notes	This value must be less than K Mem For Spool (Administration/Memory menu). A 00000 value does not turn off the spooling buffer for the LocalTalk interface. If the value is set to 00000, the printer calculates the Min K Spool automatically at initialization. The printer is immediately restarted when a change is made to this option. (For example, change the value to 35, press the Select key, and the menu changes to LocalTalk. Press the Online key and the printer automatically reboots.)

Connection

Allows you to enable or disable print spooling.

Menu	Administration/Communications/LocalTalk/Connection
Choices	Conventional—Allows one LocalTalk connection and accepts only one print job at a time. If two users send print jobs to the printer, the workstation belonging to the first user is unavailable until the first job has been printed, and the workstation belonging to the second user is unavailable until both jobs have been printed. Spool—Allows multiple LocalTalk connections and accepts (spools) more than one print job at a time. Workstations are available while jobs are printing. Both—Allows both single and multiple LocalTalk connections.
Default	Conventional

PS Protocol

Sets the binary communication protocol (BCP) for communicating over a LocalTalk interface to a PostScript printer. See chapter 5, “Additional Technical Information,” in the *Reference* manual for a full discussion of PS Protocol.

Menu	Administration/Communications/LocalTalk/PS Protocol
Choices	Normal—Enables standard, ASCII (7-bit) hex protocol. Data is sent and received in ASCII format. This mode is recommended if you do not print binary data. It was designed for data in the printable ASCII range. Print jobs can change this setting through PostScript operators. Normal Fixed—Enables standard, ASCII (7-bit) hex protocol. Print jobs cannot change this setting through PostScript operators. Binary—Enables binary communications protocol (BCP). Print jobs can change this setting through PostScript operators. Data in the printable ASCII range also prints. Binary Fixed—Enables binary fixed communications protocol (BCP). Print jobs cannot alter change this setting through PostScript operators. Data in the printable ASCII range also prints.
Default	Normal
Notes	See chapter 5, “Additional Technical Information,” of the *Reference* manual for a full discussion of PS Protocol.

Def Job Prio

Allows you to specify which jobs are printed first, according to the interface through which they are received, when jobs are received simultaneously. In other words, you can give jobs received via the

LocalTalk interface priority over jobs received via the parallel or optional serial interface.

Menu	Administration/Communications/LocalTalk/Def Job Prio
Choices	001-100 (highest-lowest priority)
Default	001 (highest priority)

Optional Serial Interface

What's in the Serial Interface Kit

The optional serial interface assembly kit includes the following:

- Serial interface with ribbon cable attached

Installing an Optional Serial Interface

QMS requires that only QMS-certified service technicians install the optional serial interface on your QMS 4060 Print System. See appendix A, "QMS Customer Support," for information on how to contact QMS National Field Service.

Serial Interface

Connecting your printer to a PC via the optional serial port involves assembling the proper interface cabling, making the connection, and installing the necessary PC printing software.

» **Note:** *The serial interface is an option which must be purchased through QMS. See appendix A, "QMS Customer Support," for a list of locations and telephone numbers.*

Before Making a Serial Connection

If you have a new PC and it has not been connected yet, before connecting the printer to the PC, you should follow the manufacturer's

instructions for setting up the PC and installing (if necessary) any operating system software, such as DOS and/or Windows.

What You Need for a Serial Interface

Interface cables are not included with your printer. If you're replacing a printer, you may already have the necessary cables. If not, you'll need to purchase the cables from your QMS vendor or a local computer store.

To connect your printer to a single PC, you need a serial cable with either a 9- or 25-pin connector (depending on your PC's serial port) and a 9- or 25-pin null modem assembly to connect to the serial cable. Depending on the type of null modem assembly you have, you may also need a 9-to-25-pin adapter. See your cable vendor for more specific cable assembly information.

» **Note:** *See the "Cable Pinouts" section of appendix B, in the Reference guide for cable pinout specifications.*

How to Choose a Serial Cable

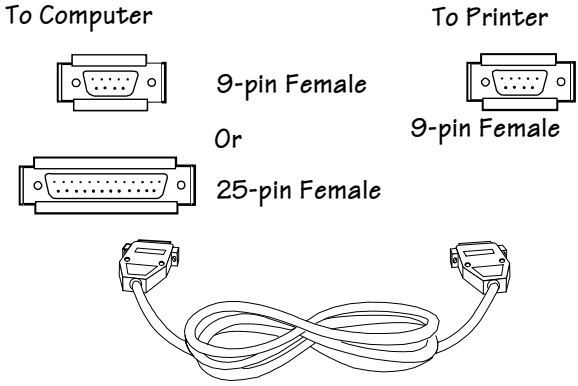
If the printer is more than about 6.5 feet/2 meters from the PC, we recommend using a serial cable for better communication. For best results, the serial cable should be less than 25 feet/7.6 meters long.

Making the Connection

▲ **Caution:** *If you're connecting the printer to a single PC via the serial interface, turn off both systems first.*

- Serial cable
  - a Connect the serial cable (with the null modem adapter attached) to the PC's 9- or 25-pin male serial port.
  - b Connect the other end of the cable to the printer's serial port (labeled "SERIAL").

c Tighten the screws.



4 Turn on both the printer and the PC.

A start-up page should print and Serial RS-232C should be listed with the interfaces. If it doesn't, see the "Printer Problem Checklist" in chapter 9, "Troubleshooting Printer Problems," of the *Operation* guide.

5 Test communication between the printer and the PC.

You can do this by sending a file from one of your applications, or you can see, "Testing Communication" in chapter 9, "Troubleshooting Printer Problems," of the *Operation* guide.

PC Printing Software

If you're replacing a PostScript printer, you can probably start printing now with the printing software already in place. Refer to your application documentation for instructions on sending documents to the printer.

However, if you want to be able to use all your printer's special features (like collation, 600x600 dpi), **or** if you've never printed to a PostScript printer before, we recommend you take a few minutes to make sure you have the following printing software installed:

- A PostScript printer driver

- Printer description files (if you use QuarkXPress 3.3, Aldus PageMaker, or Adobe PhotoShop)

Installing a PostScript Printer Driver

If you're using Windows, we recommend that you install the QMS-developed Windows driver, which is on the disk called Windows Drivers (shipped with the printer). Instructions for installing and activating the driver are included in the readme file which accompanies the driver software.

If you're using a non-Windows application, read the printing section of the application documentation for information on choosing a PostScript driver. If the application does not provide a PostScript driver, contact the application manufacturer to see if one has become available since you bought the program. Also, PostScript drivers for some applications are available through the QMS bulletin board and through CompuServe; see appendix A,"QMS Customer Support," for information.

Also, check to see if application notes (tips for printing from specific applications) are available for your application from Q-FAX, the QMS bulletin board, or CompuServe. appendix A, "QMS Customer Support," explains how to use these QMS information services.

Printer Description Files

Printer description files for Windows applications are included on the QMS-developed Windows Drivers disk shipped with your printer.

If you use the QuarkXPress 3.3, after you install the QMS driver for Windows, install the QMS 4060 PDF according to the instructions in your QuarkXPress documentation for installing PDFs.

If you use PageMaker 5.*x*, use the version 4 PPD on our Windows Drivers disk. If you experience problems using our Windows driver with this application, refer to chapter 9, the"Windows Driver Problems" section, in the *Operation* guide for more information.

If you use Adobe Photoshop, for best output quality use the QMS-developed Windows driver. Then, so that choices in the QMS driver

take effect, go to PhotoShop's Page Setup dialog box, and select Use Printer's Default Screen under the Screens option.

Printing from the PC

You're now ready to print from your PC. From this point, you'll probably perform most printing tasks from your application. For specific information, check the printing section in your application documentation.

For information on print media types and sizes, see chapter 2, "Print Media," in the *Reference* guide.

Setting Serial Interface Parameters

Use the Administration/Communications/Serial menu to set the serial interface communication values used for printer-host communication.

Mode

Enables or disables the serial port.

Menu	Administration/Communications/Serial/Mode
Choices	Interactive—Establish two-way communication between the host and the printer. Noninteractive—Establish one-way communication from the host to the printer. Disabled—Turn off serial communication with the host. The printer stops accepting print jobs over the serial interface.
Default	Interactive
Notes	The printer must be restarted for changes to the Mode menu to take effect. You can either let the printer restart automatically after you save the change and exit the Configuration menu, or you can wait for the change to take effect the next time you manually turn on the printer.

Emulation

Sets the serial interface emulation.

Menu	Administration/Communications/Serial/Emulation
Choices	ESP, Hexdump, PostScript, PCL5, HPGL, Lineprinter » **Note:** *Other optional emulations such as, TIFF, CAL, CCITT, and LN03 also appear, if installed.*
Default	ESP

Minimum Number of Kilobytes for Spooling

Sets the minimum number of kilobytes of system memory allocated to the serial interface.

Menu	Administration/Communications/Serial/Min K Spool
Choices	00000-99999
Default	00015
Notes	This value must be less than K Mem For Spool. A 00000 value does not turn off the spooling buffer for the serial interface. If the value is set to 00000, the printer calculates the Min K Spool automatically at initialization. The printer must be restarted for changes to the Min K Spool menu to take effect. You can either let the printer restart automatically after you save the change and exit the Configuration menu, or you can wait for the change to take effect the next time you manually turn on the printer.

Spooling Timeout

Sets the number of seconds the interface waits for data from the host before terminating a spooled print job.

Menu	Administration/Communications/Serial/Spool Timeout

Choices	00000-99999
Default	00030

End Job Mode

Enables (and identifies an end-of-job sequence) or disables data stream sensing for the end-of-document (EOD) command.

Menu	Administration/Communications/Serial/End Job Mode
Choices	None—The printer recognizes only the PostScript ^D command. QMS EOD—The printer recognizes only the QMS %%EndOfDocument command. HP EOD—The printer recognizes only the HP <ESC>%12345X command.
Default	None
Notes	See chapter 5, “Additional Technical Information,” in the *Reference* guide for details on how to implement this feature on your QMS 4060 Print System.

Default Job Priority

Allows you to specify which jobs are printed first, according to the interface through which they are received, when jobs are received simultaneously. For example, you can give jobs received via the serial interface priority over jobs received via the parallel and Ethernet interfaces.

Menu	Administration/Communications/Serial/Def Job Prio
Choices	001-100 (highest-lowest priority)
Default	001 (highest priority)

Baud Rate

Sets the rate data is transmitted (bits per second) over the serial interface.

Menu	Administration/Communications/Serial/Baud Rate
Choices	300, 600, 1200, 2400, 4800, 9600, 19200, 38400

Default	9600
Notes	Baud rates of 19200 and 38400 require hardware flow control (Administration/Communications/Serial/Hdwe Flow Ctl menu).

Parity

Sets the check bit used to identify data transmission errors.

Menu	Administration/Communications/Serial/Parity
Choices	None, Odd, Even
Default	None
Notes	The printer's parity setting must match that of the host or application. Use the Administration/Communications/Serial/Ignore Parity menu to specify how the printer handles parity errors.

Ignore Parity Errors

Specifies how the printer should handle parity errors.

Menu	Administration/Communications/Serial/Ignore Parity
Choices	Off—Ignore parity errors. The printer prints its best interpretation of the character(s) affected by the error. On—Don't ignore parity errors. The printer replaces the character(s) affected by the error with a question mark.
Default	Off
Notes	Use the Administration/Communications/Serial/Parity menu to set parity.

Receive Software Flow Control

Sets the software communication protocol used by the printer to control communication from the host computer.

Menu	Administration/Communications/Serial/Rcv Sw Flow Ctl
Choices	ETX/ACK, Robust XON/XOFF, None, XON/XOFF
Default	XON/XOFF

Transmit Software Flow Control

Sets the software communication protocol used by the host computer to control communication with the printer.

Menu	Administration/Communications/Serial/Xmit Sw Flow Ctl
Choices	ETX/ACK, None, XON/XOFF
Default	None

Data Bits

Sets the number of data bits transmitted per character.

Menu	Administration/Communications/Serial/Data Bits
Choices	7 Bits, 8 Bits
Default	8 Bits

Stop Bits

Sets the number of stop bits transmitted per character.

Menu	Administration/Communications/Serial/Stop Bits
Choices	1 Bit, 2 Bits
Default	1 Bit

Hardware Flow Control

Controls the flow of data between the printer and the host.

Menu	Administration/Communications/Serial/Hdwe Flow Ctl	
Choices	DSR POL	Normal, reverse
	DSR	Off, on
	DTR POL	Normal, reverse
	DTR	Off, on
	RTS	Off, on
	CTS	Off, on

Defaults	DSR POL DSR DTR POL DTR RTS CTS	Normal Off Normal On Off Off
Notes	If the host uses hardware flow control, set this option to match the type used by the host. However, to download printer system software to the system disk via the serial port and the cable pinouts must be connected as shown in appendix B, “Technical Specifications,” of the *Reference* guide	

PS Protocol

Sets the binary communications protocol (BCP) for communicating over a serial interface to a PostScript printer.

Menu	Administration/Communications/Serial/PS Protocol
Choices	Normal—Enables standard, ASCII (7-bit) hex protocol. Data is sent and received in ASCII format. This mode is recommended if you do not print binary data. It was designed for data in the printable ASCII range. Print jobs can change this setting through PostScript operators. Normal Fixed—Enables standard, ASCII (7-bit) hex protocol. Print jobs cannot change this setting through PostScript operators. Binary—Enables binary communications protocol (BCP). Print jobs can change this setting through PostScript operators. Data in the printable ASCII range also prints. Binary Fixed—Enables binary fixed communications protocol (BCP). Print jobs cannot alter change this setting through PostScript operators. Data in the printable ASCII range also prints.

Default	Normal
Notes	See chapter 5, “Additional Technical Information,”in the *Reference* guide for a full discussion of PS Protocol.

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4

Optional Emulations

In This Chapter . . .

- "Softloadable Emulations" on page 4-2
- "Emulation Configuration" on page 4-5

Softloadable Emulations

Optional emulations, such as ImageServer, LN03 Plus, QUIC II, CGM, QFORM, and XES are available as PostScript files on floppy disks for your PC.Contact QMS for the available optional emulations. This section describes how to download an optional emulation to the printer's hard disk. See your emulation documentation on the latest and more complete information on downloading and configuring optional emulations.

» **Note:** *QMS recommends that you have at least 1 MB of memory above the base configuration and that you add that memory to the K Mem Emulation memory client. This will ensure that the printer will be able to run the emulation without slowing down performance.*

Some optional emulations (LN03 Plus, QUIC II, and ImageServer) are equipped with their own removal files. To remove an emulation (for example, QUIC II emulation) from a printer, send its removal file (for example, quic2del.ps) to the printer via serial/parallel/network interface. The procedure for downloading an emulation or emulation removal file via the serial/parallel/network interface is the same as downloading the emulation.

» **Note:** *As soon as the removal file is sent, the printer will generate a message to indicate the removal of the emulation. Also, the printer will then perform a self-reboot to refresh the print system.*

However, if the emulation does not have a removal file, the emulation can be removed by reformatting the hard disk of the printer from the following menu option: (Administration/Disk Operations/Format Disk).

Procedure for Downloading an Emulation

» **Note:** *QUIC II fonts have to be downloaded together with its system file. DO NOT use the QUIC II emulation without downloading its required fonts.*

Via a Parallel or Serial Interface

1 If necessary, connect the PC to the printer's parallel or serial port.

2 **Turn on the printer, and wait for `IDLE` to appear in the message window.**

3 **Insert the emulation disk in your PC's 3.5" disk drive, and change to that drive (for example, if you're using the A drive, type `a:`↵).**

4 **Send the emulation to the printer's hard disk.**

- If your PC and printer are connected through the parallel port, type

  ```
  copy /b *.ps lpt#↵
  ```

  where `#` is 1 to 3. (`/b` refers to binary files.)

- If your PC and printer are connected through the optional serial port, type

  ```
  copy /b *.ps com#
  ```

  where `#` is 1 to 4. (`/b` refers to binary files.)

5 **When the downloading is complete, reboot the printer.**

The emulation is ready to be used.

Via an Ethernet Interface

» **Note:** *Before you begin this procedure, your printer and PC (or UNIX workstation) must be connected to an Ethernet network running TCP/IP and have valid IP addresses.*

1 **If your PC is running Windows, change to DOS.**

2 **Insert the emulation disk in your PC's 3.5" disk drive, and change to that drive (for example, if you're using the A drive, type `a:`↵).**

3 **If you want to download the emulation from a UNIX workstation, copy the installation file from your PC to a temporary directory on your workstation.**

4 **Turn on the printer, and wait for `IDLE` to appear in the message window.**

5 Open an ftp session at your PC or workstation by typing one of the following commands:

`ftp` *`printername`*↵ (for example, ftp pctdev6↵)
`ftp` *`ipaddress`*↵ (for example, ftp 161.33.130.45↵)

6 When prompted for a user name and password, press Enter.

An ftp> prompt displays.

7 At the `ftp>` prompt, change to binary mode by typing

`bin`↵

8 At the `ftp>` prompt, send the emulation file to the printer's hard disk by typing

`put` *`filename`*`.ps`↵

where *filename* is the name of the installation file.

The printer's message window reads `1 Active Job`, and the Disk light flashes to indicate that the emulation is being downloaded to the hard disk. The `ftp>` prompt returns when the emulation has finished loading.

9 At the `ftp>` prompt, end the ftp session by typing

`quit`↵

10 When the Disk light stops flashing and the printer's message window reads `Idle` for at least 30 seconds, turn the printer off and then on again.

11 When the printer's message window reads `Idle` again, the emulation is ready to use.

The emulation should be listed in the Options section of the printer's start-up page, in the Administration/Emulation printer's configuration menu, and on the advanced status page.

» **Note:** *You may want to erase any installation files left on your PC (and/or workstation), and then remove any temporary directories.*

Emulation Configuration

When an emulation has been downloaded to the printer's hard disk and the printer has been rebooted, the emulation will show up on the printer status page and in the configuration menu. Refer to the manuals provided with the emulation for configuration options for CALS (ImageServer), TIFF (ImageServer), CGM, LN03 Plus, and QUIC II.

Use the Administration/Emulations menu to set the parameters for the available printer emulations. Optional emulations appear only if installed.

» **Note:** *To choose an emulation or ESP for a particular interface, use the appropriate interface menu in the Administration/Communications menu.*

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5

New System Software

In This Chapter . . .

- “Updating System Software” on page 6-2
- “Procedure—Macintosh Users” on page 6-3
- “Procedure—PC Users—Parallel and Serial” on page 6-5
- “Downloading the System Software—Ethernet” on page 6-8

Updating System Software

The system software in your QMS 4060 Print System is stored on the internal hard disk. This allows you to update the system software without opening up the printer and installing new PROMs. Updated system software allows you to take advantage of future enhancements to the printer.

» **Note:** *The software loadable system mentioned in this section does not modify the code used by QMS CrownNet interface cards.*

Use the Administration/Miscellaneous/New System Image menu to update the system software (image on the hard disk).

Menu	Administration/Miscellaneous/New System Image
Choices	Yes—Download new system code No—Don’t download new system code
Default	No

Passwords and Updated System Software

When print system software is updated, any passwords you've set for the Operator Control and Administration menus are lost. To reset these passwords, refer to chapter 6, “Security Key” on page 6-55.

Requirements

The following table describes the minimum requirements needed to download system software to your QMS 4060 Print System.

Downloading via:	Macintosh	PC - Parallel	PC - Serial	Ethernet
Free hard disk space needed on host computer	Minimum 4.5 MB	Minimum 4.5 MB	Minimum 4.5 MB	Minimum 4.5 MB
Notes	Requires connection from Macintosh serial port to serial port of printer. Cable must be wired as null modem or null modem adaptor attached.	Recommended method for downloading from an IBM or compatible PC. Fastest download method. No additional cables or changes of port settings required.	For use when parallel method is unavailable. Requires null modem cable (see appendix B for cable information).	Requires that your printer and your PC (or UNIX workstation) be connected to an Ethernet network running TCP/IP and have valid IP addresses.

Procedure—Macintosh Users

About the SystemLoader Application

The SystemLoader application is used to download printer system software from a Macintosh to the printer. It must be decompressed from four Macintosh disks onto your Macintosh's hard disk before it can be used.

Decompressing the SystemLoader Application

The SystemLoader application comes on two disks. Before you can update the printer's system software, you must decompress the files on the disks. Use the following procedure:

1 Create a new folder on the Macintosh.

2 Insert disk 1 into the floppy disk drive.

3 Double-click the SystemLoader.1 file icon.

The UnStuffIt application starts up, decompresses the SYSTEM-LOADER.1, SYSTEMLOADER.2, SYSTEMLOADER.3, and SYSTEMLOADER.4 files, and joins them to create the System-Loader application.

Downloading the System Software

After you have decompressed the SystemLoader application, as described in the previous section, use the following procedure to update the system software in system memory.

1 Connect the Macintosh to the printer's serial port.

You can use either the printer or modem port on the Macintosh. However, the modem port provides the fastest download. Refer to appendix B, "Technical Specifications," of the *Reference* manual for a pinout description of the cable needed.

2 Turn on the printer, wait for `IDLE` to appear in the message window, and then print an advanced status page.

This procedure should not change the current configuration settings. However, the advanced status page provides a record of all current configuration settings, so you can verify that they are the same or recover your settings after the system software has been updated.

3 Access the Administration/Miscellaneous/New System Image menu.

4 Select Yes in the New System Image menu.

The printer automatically reboots and waits for the new system software (image) to be sent from your Macintosh.

5 Send the new image to the printer.

a At the Macintosh, double-click the SystemLoader icon.

b In the dialog box that appears, make sure the correct download port is selected, and then choose the Send button to start the download.

The downloading process takes about 30 minutes. After the updated system software has been written to the system disk, the message `Download Complete!` appears on the Macintosh screen, and the printer reboots with the new system software.

» **Note:** *The new system image will not erase the old image until the printer verifies that the new image is valid.*

6 Print another advanced status page, and verify that the configuration settings are the same.

Procedure—PC Users—Parallel and Serial

Use the following procedure to update the system software in system memory whether downloading through the parallel or serial port.

Decompressing the System Software

Before the printer system software can be downloaded, it must be decompressed on your PC's hard disk.

1 Switch to an MS-DOS prompt.

2 Create a new directory on your PC.

3 Change to this directory.

4 Insert the printer system software disk in your PC's 3.5" disk drive.

5 Type *x*`:pkunzip` *x*`:system`↵ where *x* is the name of the disk drive in which you inserted the system software disk.

6 Follow the prompts.

They instruct you to insert the system software disks in the following order:

a Last disk (system software disk 4)

b Disk 1 (system software disk 1)

c Disk 2 (system software disk 2)

d Disk 3 (system software disk 3)

e Disk 4 (system software disk 4)

7 Turn on the printer, wait for `IDLE` to appear in the message window, and then print an advanced status page.

The advanced status page provides a record of all current configuration settings, so you can verify that they are the same or recover your settings after the system software has been updated.

Downloading the System Software—Parallel

1 Access the Administration/Miscellaneous/New System Image menu.

2 Select Yes in the New System Image menu.

The printer automatically reboots and waits for the new system software (image) to be sent via your PC's parallel port.

3 Send the new image to the printer.

- Type the following:

```
copy /b *.dl lpt#↵
```

where # is 1 to 3. (/b refers to binary files.)

4 While the system software is loading the Data and Disk indicators will flash off and on. The display will show:

```
Downloading image
via parallel port.
```

5 After the updated system software has been written to system disk, the printer returns to `IDLE`.

» **Note:** *The new system image will not erase the old image until the printer verifies that the new image is valid.*

6 Print another advanced status page, and verify that the configuration settings are the same.

Downloading the System Software—Serial

1 Connect the serial cable to the printer.

2 Access the Administration/Miscellaneous/New System Image menu.

3 Select Yes in the New System Image menu.

The printer automatically reboots and waits for the new system software (image) to be sent via your PC's serial port (YES remains in the message window until the new image is sent).

Type the following:

```
copy /b *.dl com#
```

where # is 1 to 4. (/b refers to binary files.)

The downloading process takes about 30 minutes depending on the size of the file and the speed of your computer. The Data indicator blinks as the new system image is copied to the printer.

4 While the system software is loading the Data and Disk indicators will flash off and on. The display will show:

```
Downloading image
via serial port.
```

5 After the updated system software has been written to system hard disk, the printer returns to `IDLE`.

» **Note:** *The new system image will not erase the old image until the printer verifies that the new image is valid.*

6 Print another advanced status page, and verify that the configuration settings are the same.

Downloading the System Software—Ethernet

1 Switch to an MS-DOS prompt.

2 Change to the directory that contains the SYSTEM.PS file.

3 Type `ftp` *xxx*↵ (where *xxx* is the IP address of your printer).

4 For the user name press Enter.

5 For the password press Enter.

6 At the FTP prompt type `bin`↵ to change to binary mode.

7 Type `put system.ps`↵.

8 When the software has finished downloading and the FTP prompt returns, type `quit`↵ to return to the DOS prompt.

❖

6

Hardware Options

In This Chapter . . .

- “Large-Capacity Input Feeder” on page 6-2
- “2000-Sheet Large-Capacity Output Stacker” on page 6-10
- “3000-Sheet Large-Capacity Output Stacker” on page 6-23
- “Custom Tray” on page 6-51
- “Security Key” on page 6-55
- “BuzzBox Lite” on page 6-58

Large-Capacity Input Feeder

The Large-Capacity Input Feeder (LCIF) holds 3000 sheets and increases the paper input capacity of the printer to 4500 sheets. There are two models of the LCIF: one model feeds letter-size paper and the other model feeds A4-size paper.

What's in the Kit?

- Large-Capacity Input Feeder (LCIF)
- Interface cable
- Paper feeder guide support stand
- Sheet guide and support stand guide

Installation Procedure

WARNING*: The LCIF weighs approximately 44 lb. (20 kg). Do not attempt to lift or move it by yourself.*

ACHTUNG! *Der LCIF wiegt ca. 20 kg; bitte versuchen Sie niemals, das Gerät alleine anzuheben oder zu tragen.*

1 Unpack the paper feeder, the interface cable, and the paper feeder support stand, from the box.

a Open the LCIF box.

b Reach into the box and grasp the sides of the foam shipping blocks.

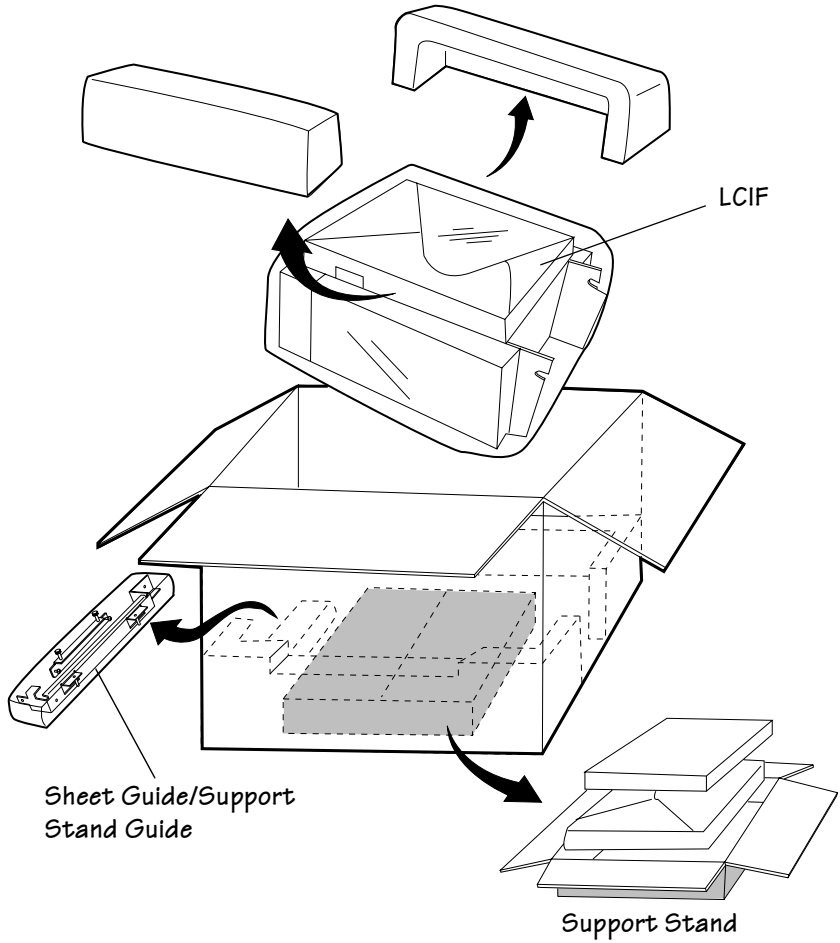
c Carefully lift the LCIF (including the foam shipping blocks) out of the box and place it on the floor.

d Remove the foam shipping blocks and plastic cover.

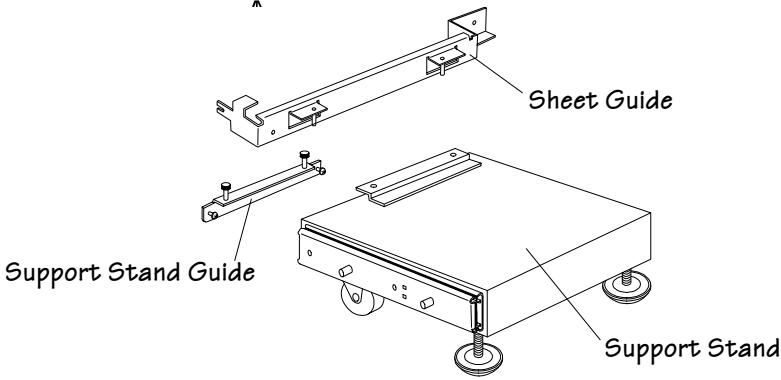
e Open the LCIF door and remove all packing materials inside.

f Remove the sheet guide/support stand guide and support stand from the box.

g Save the packing material for possible repacking of the LCIF.

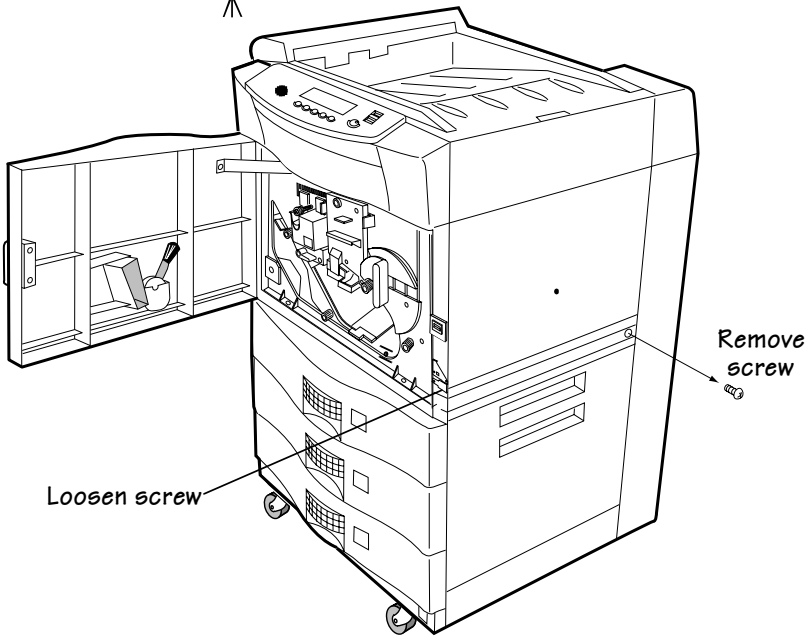


2 **Locate the support stand, the support stand guide, and the sheet guide.**

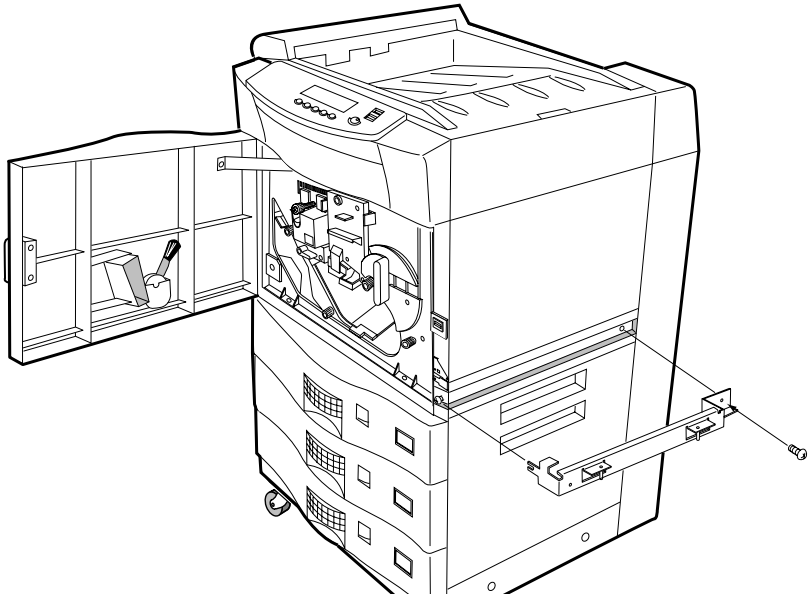


3 **Open the front door of the printer.**

4 **Using a Phillips screwdriver, remove the right side paper input cover by loosening the front screw and removing the rear screw.**

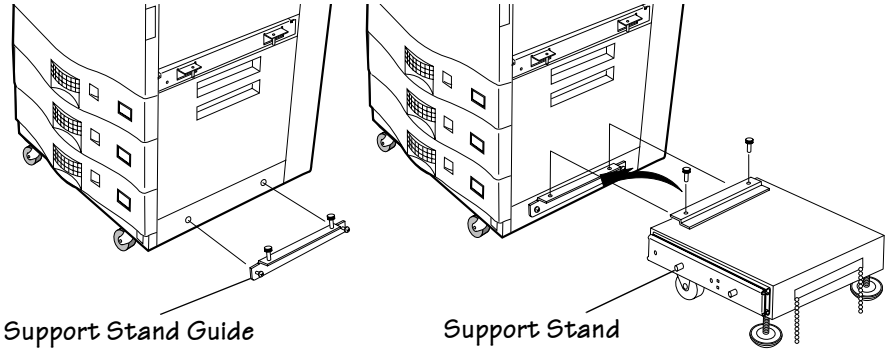


5 Attach the sheet guide to the printer using the screws you loosened and removed in step 4.



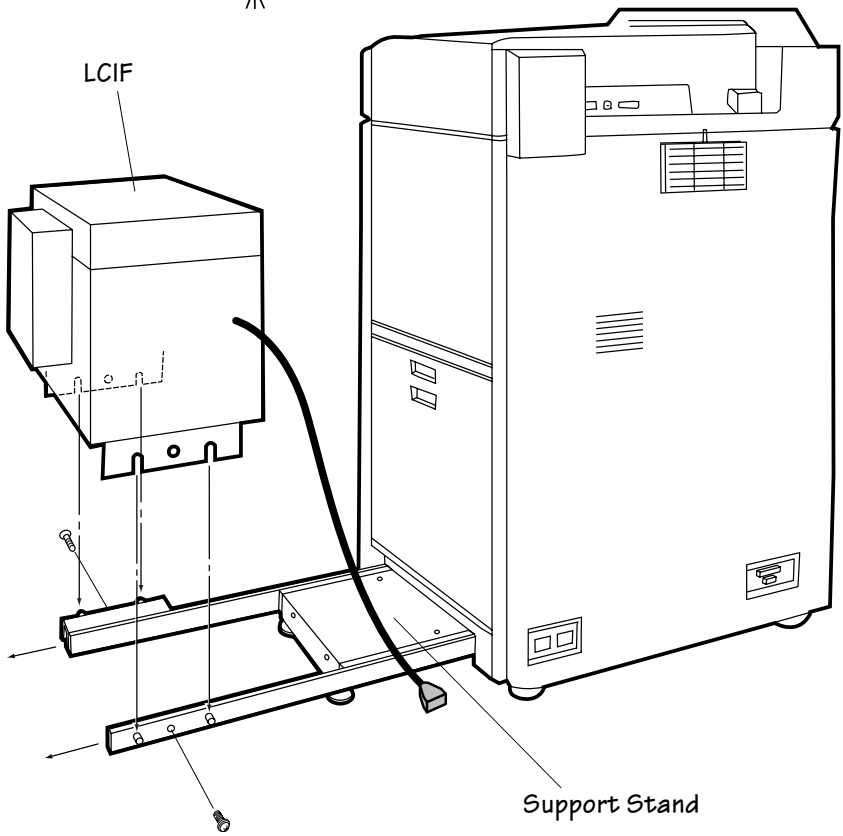
6 Install the support stand guide using the screws attached.

7 Lift the support stand and place on top of the support stand guide.



8 **Attach the support stand to the support stand guide.**

9 **Pull out the support stand slide-rails until they lock in the out position.**

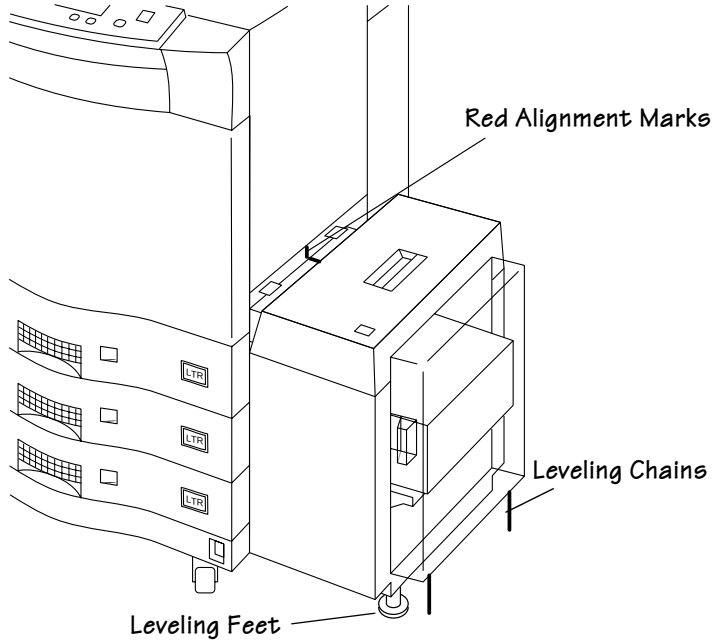


10 **Set the LCIF on the pins of the slide-rail.**

11 **Secure the LCIF to the support stand using the two thumb-screws.**

12 Slide the LCIF into the sheet guide on the printer, until it locks in place.

13 Adjust the leveling feet on the LCIF support stand so that the two leveling chains are just touching the floor.

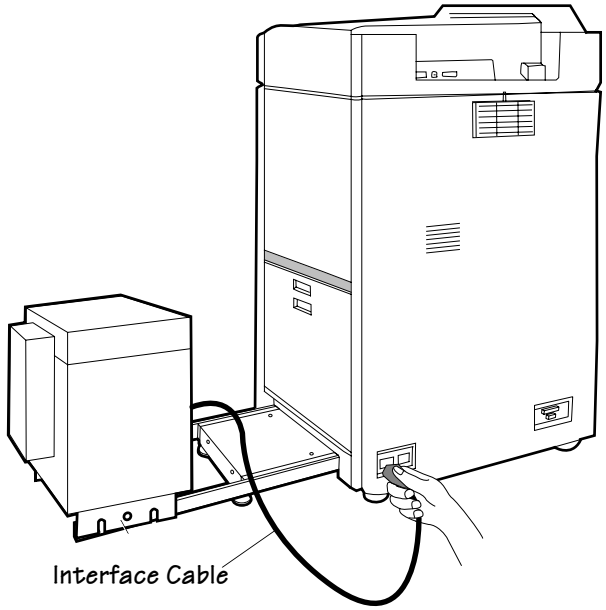


14 Make sure the red alignment marks on the LCIF and the sheet guide line up. If the alignment marks do not line up, adjust the leveling feet on the support stand.

15 Make sure the power on the printer is turned off.

16 Press the release handle on the top of the LCIF and pull the LCIF away from the printer.

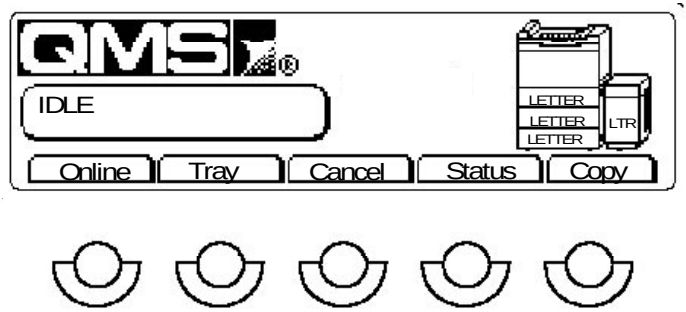
17 **Connect the interface cable to the connector on the rear lower left side of the printer.**



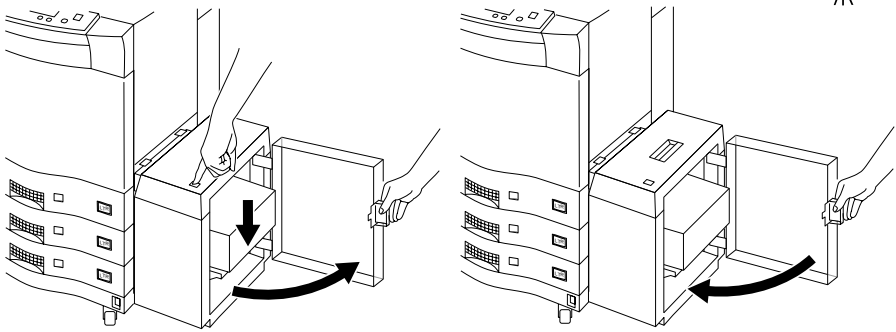
18 **Slide the LCIF into the sheet guide on the printer, until it locks in place.**

19 **Turn on the printer.**

20 Check the printer display panel for the LCIF graphic. This lets you know the LCIF is connected properly.



21 To load paper in the LCIF, open the LCIF door, press the button on top of the LCIF, load paper, and close the door.



22 Press the Tray button on the printer control panel to select the LCIF for paper feeding.

Use the Previous or Next button to highlight the LCIF on the graphic and then press Select.

2000-Sheet Large-Capacity Output Stacker

The Large-Capacity Output Stacker (LCOS) holds 2000 sheets and increases the paper output capacity of the printer to 2500 sheets.

What's in the Kit?

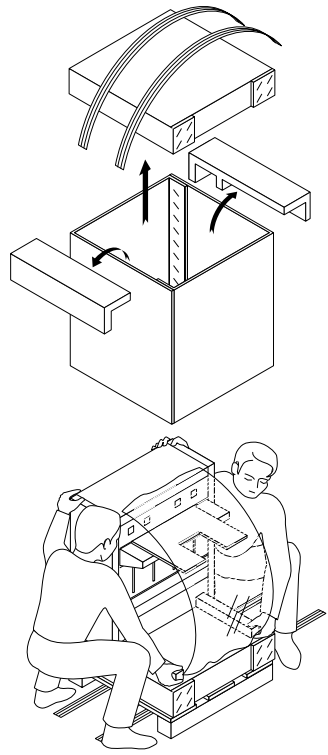
- 2000-sheet LCOS
- Interface Cable
- Output Stacker Hardware

Unpacking the 2000-Sheet LCOS

WARNING: *The LCOS weighs approximately 71 lb. (32 kg). Do not attempt to lift or move it by yourself.*

ACHTUNG! *Der LCOS wiegt ca. 32 kg; bitte versuchen Sie niemals, das Gerät alleine anzuheben oder zu tragen.*

1 Unpack the LCOS from the shipping box and with the help of another person, carefully lift the LCOS from the box and place it on the floor.

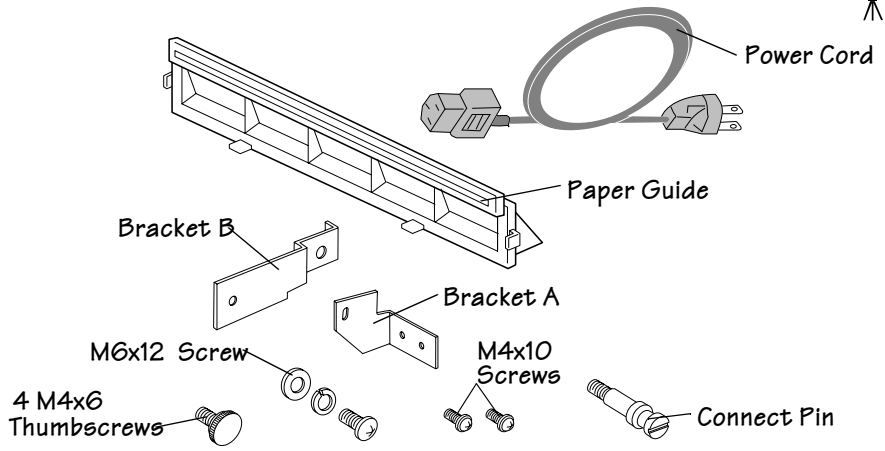


2 Remove the plastic from the LCOS.

» **Note:** *Save all packing materials for possible repacking.*

Hardware Contents

After unpacking, check for the following LCOS hardware contents:



Make sure that all items are included in your shipment before setting up your LCOS. If any items are missing or damaged, contact your shipping company or your QMS vendor. See Appendix A, “QMS Customer Support,” for product sales and support information.

Tools Required

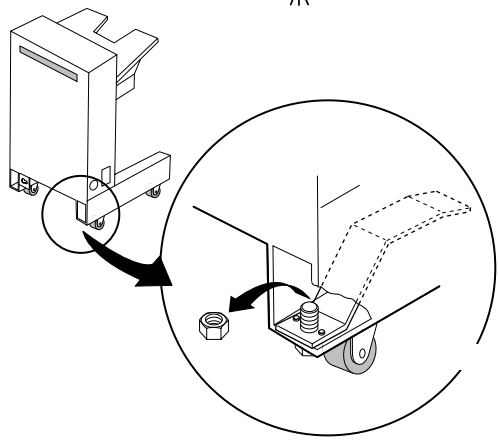
To install the LCOS, you need the following tools:

- #2 Phillips screwdriver
- Medium flat-blade screwdriver

Installation Procedure

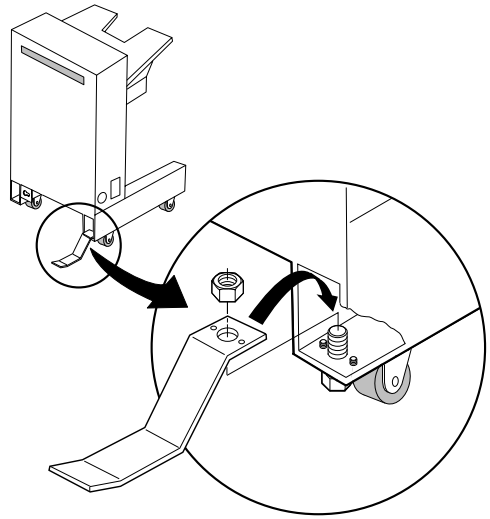
After the unpacking is complete, use the following procedure to install the LCOS.

1 Loosen the nut holding the safety tilt bar from the back of the LCOS in the bottom right leg.

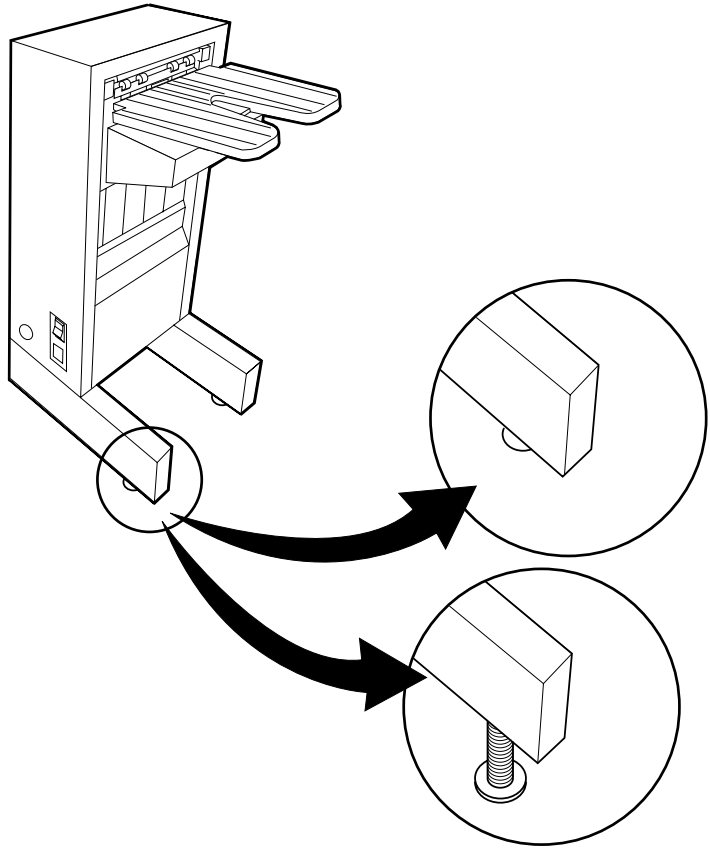


2 Remove the safety tilt bar.

3 Turn the bar over and replace in the reverse direction.



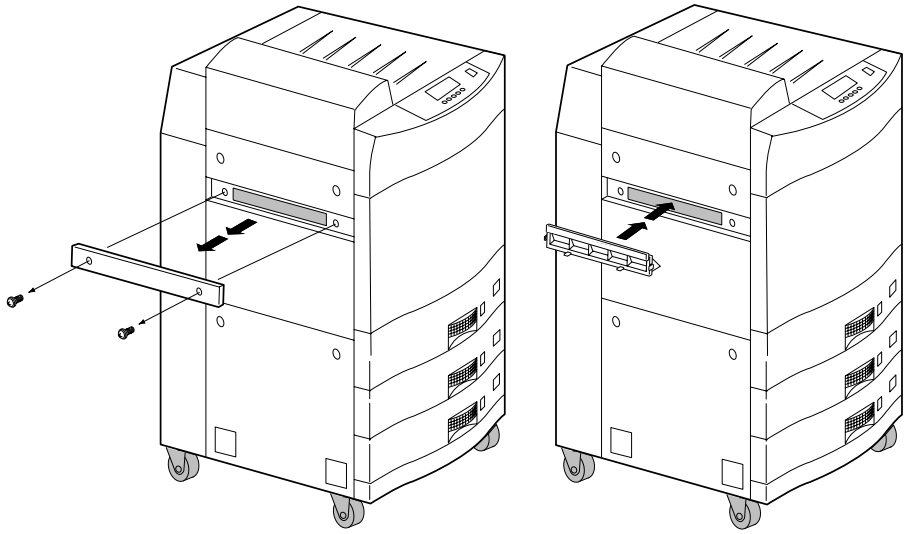
4 Raise the four leveling bolts on the LCOS.



5 Remove the upper cover from the left side of the printer by removing two screws.

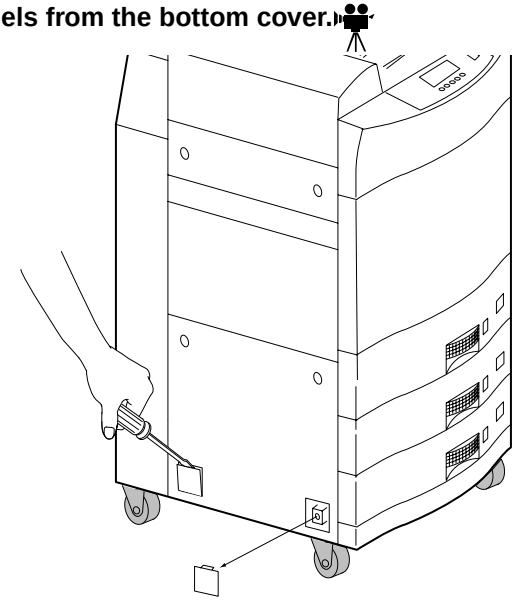
Preparing the Printer

1 Snap the paper guide into place.

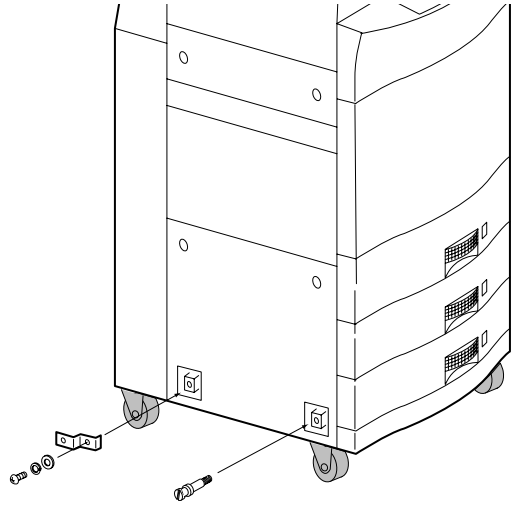


2 Locate bracket B and the connect pin included in the LCOS box contents.

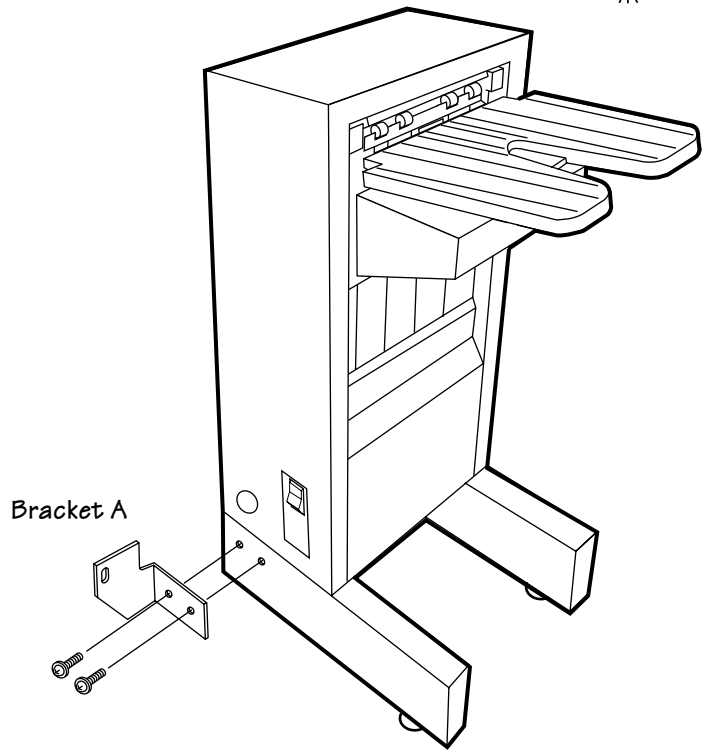
3 Use a small flat-bladed screwdriver to pop out the two small panels from the bottom cover.



4 Attach bracket B to the bottom-left side of the printer with the M6x12 screw and fasten the connect pin.



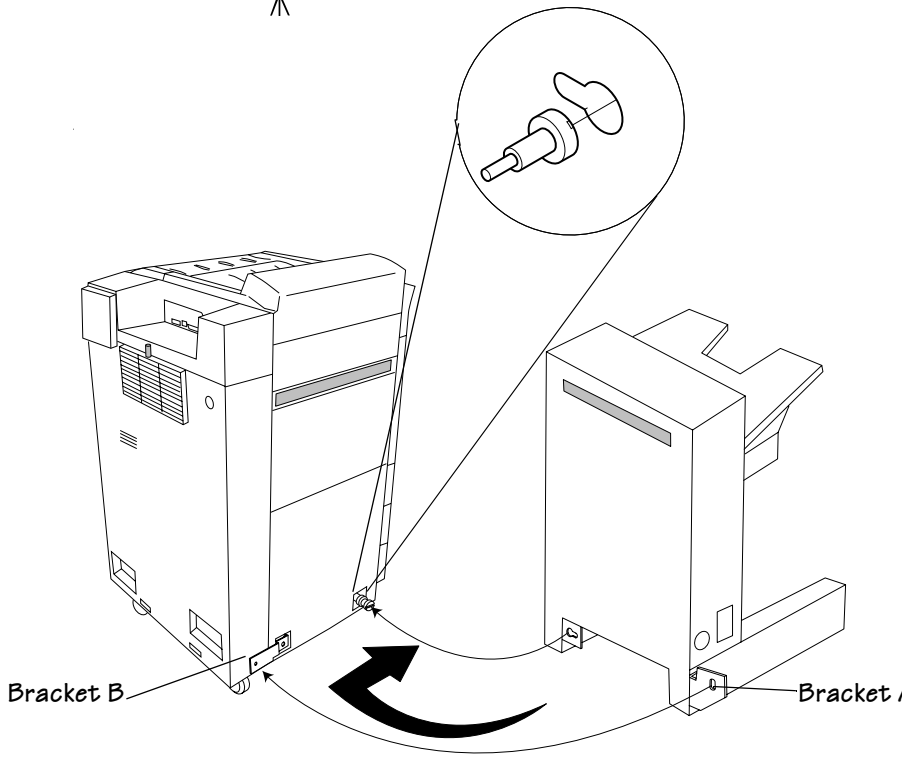
5 Attach bracket A to the bottom of the LCOS.



Connecting the 2000-Sheet LCOS to the Printer

1 Position the LCOS so that its positioning hole is aligned with the connect pin on the printer.

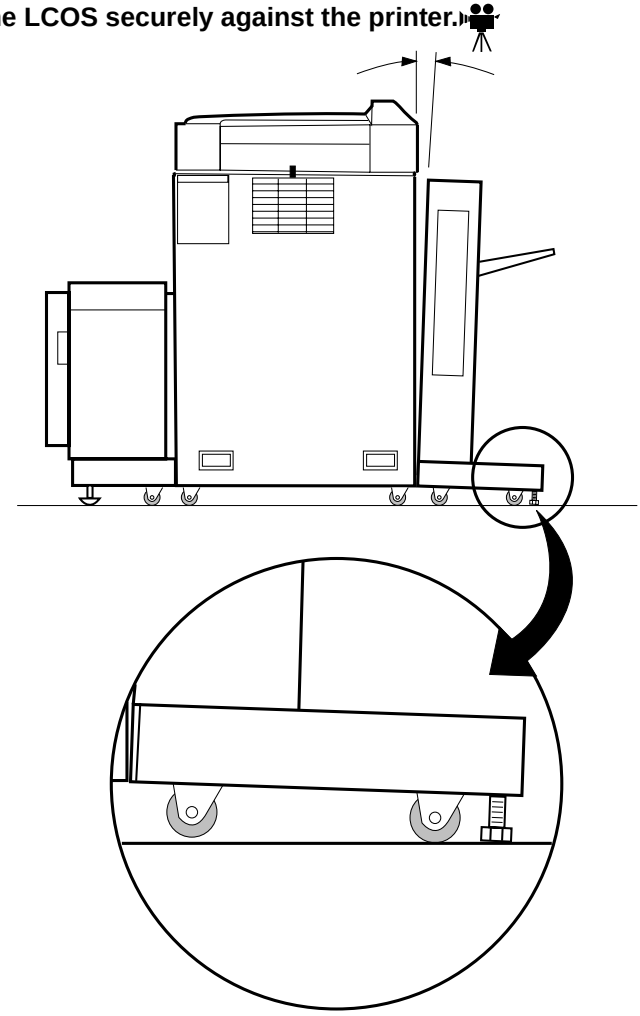
2 Push the output stacker against the printer and fit the connect pin into the larger circular section of the LCOS positioning hole.



3 Push the LCOS toward to the front of the printer to lock the pins into the positioning holes.

4 Fasten bracket A to bracket B on the printer with the M4x6 hex-type screw included with the LCOS contents.

5 Turn the two front levelers counterclockwise to tilt the top of the LCOS securely against the printer.



Connecting Cables and Turning on the LCOS

1 Plug the interface cable from the LCOS into the connector on the rear bottom right of the back of the printer.

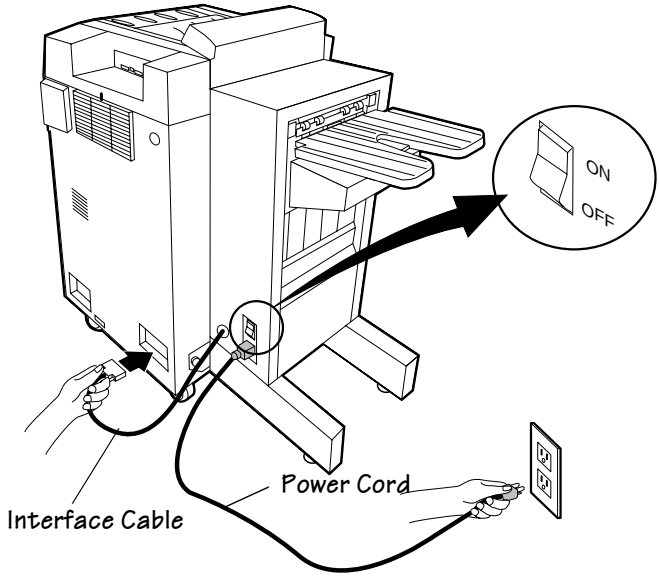
» **Note:** *Make sure the main power switch is in the off position.*

2 Plug one end of the power cord into the LCOS and the other end into a grounded outlet.

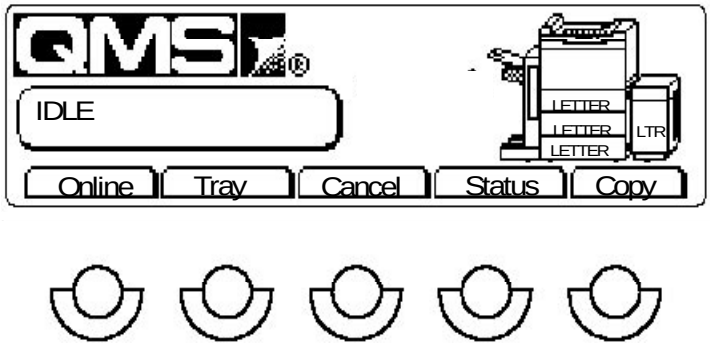
WARNING: *This product is equipped with a 3-wire grounding type plug, a plug that has a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature and the LCOS can be damaged if the plug is modified to work in a non-grounded receptacle.*

ACHTUNG! *Dieses Produkt ist mit einem 3-Phasen Stecker ausgeruestet. Bitte verwenden Sie unbedingt ein entsprechendes Gegenstueck, da es sonst zu Beschaedigungen kommen kann. Fuer den Netzanschluss dieses Geraetes ist ein gepruefte Kabel zu verwenden. Fuer einen Nennstrom bis 6A ist eine Leitung nicht leichter als H05VV-F3G 0,75 mm² oder H05VVH2-F3G 0,75mm² einzusetzen.*

3 Turn on the printer and then the main power switch on the LCOS.



4 **Check the printer display panel for the LCOS graphic. This lets you know the LCOS is connected properly.**



5 **Select the LCOS as the output bin through the Operator Control/Outputbin configuration menu.**

3000-Sheet Large-Capacity Output Stacker

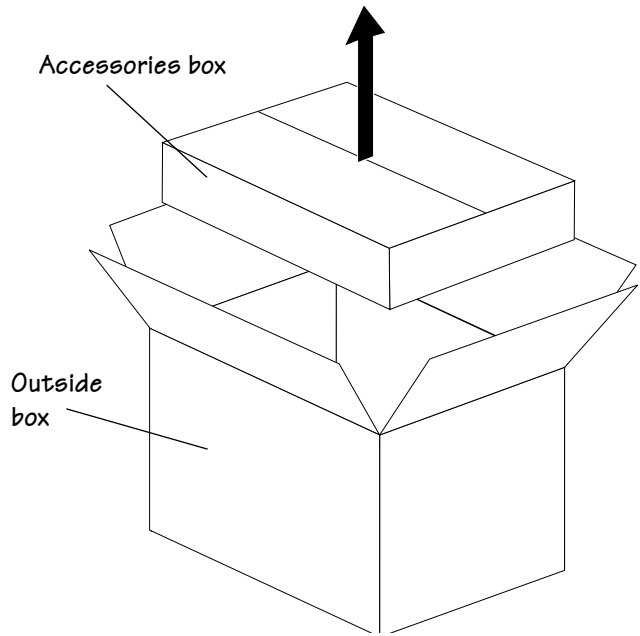
The 3000-sheet Large-Capacity Output Stacker (LCOS) holds 3000 sheets and increases the paper output capacity of the printer to 3500 sheets.

What's in the Kit?

- 3000-sheet LCOS
- Interface cable
- Output stacker hardware

Unpacking the 3000-Sheet LCOS

1 Remove the accessories box from the outer box.

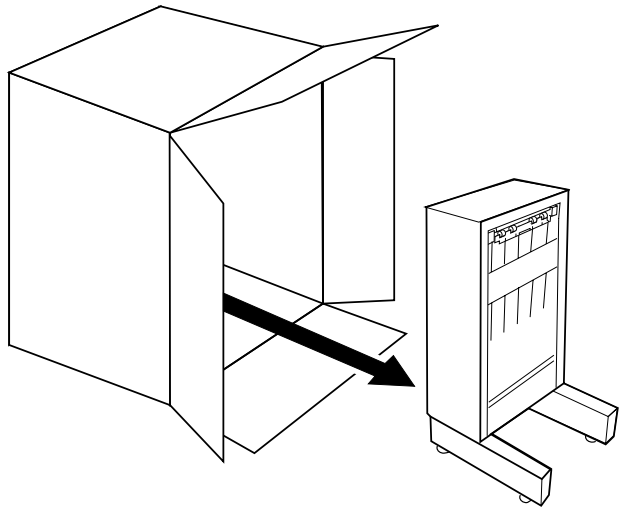


2 **Remove the power cable.**

3 **Set the box upright and remove the cardboard positioned on top of the LCOS.**

» **Note:** *The legs and casters should be on the bottom of the box.*

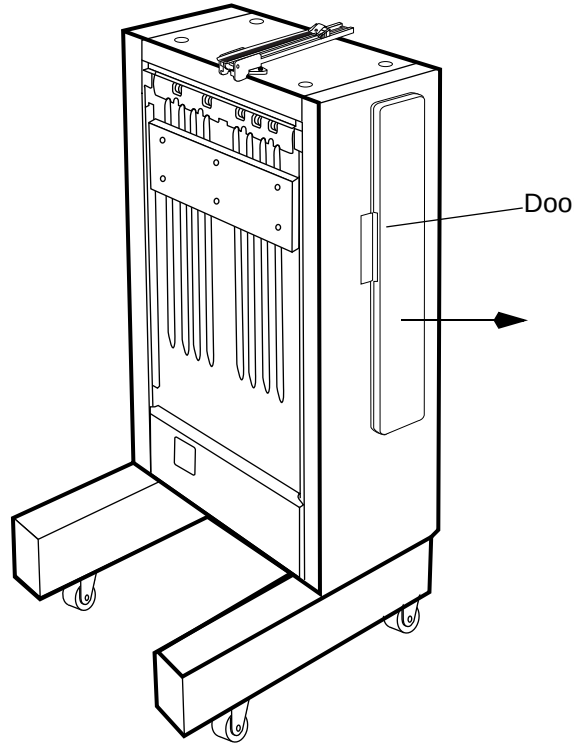
4 **Firmly grasp the top and bottom of the LCOS and roll it slowly out of the box, ensuring that the LCOS doesn't fall back as you do so.**



5 **Remove the packing tape and the plastic from the LCOS.**

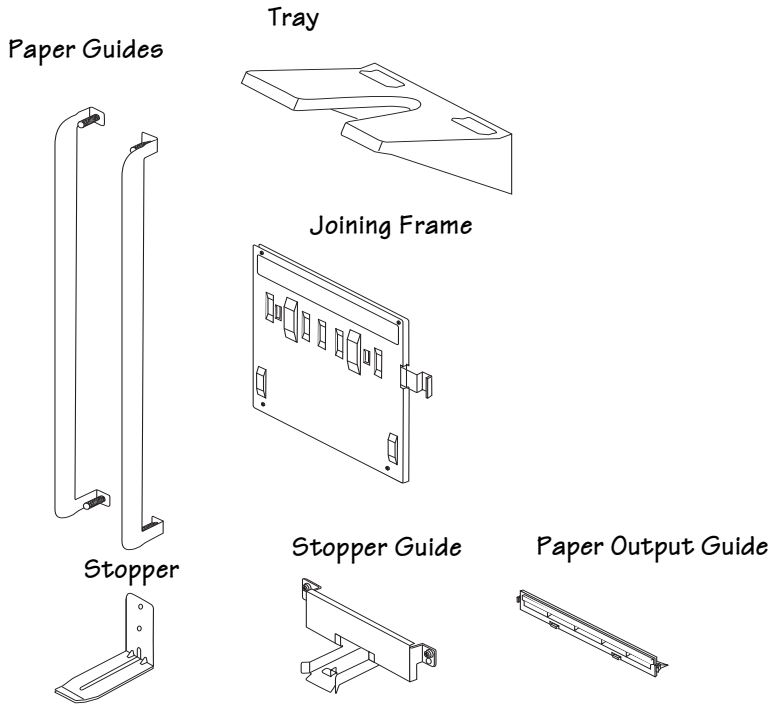
» **Note:** *Save all packing materials in case you ever need to move or ship the LCOS.*

6 Open the LCOS door and remove the tape on the paper guides inside the LCOS.



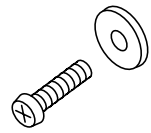
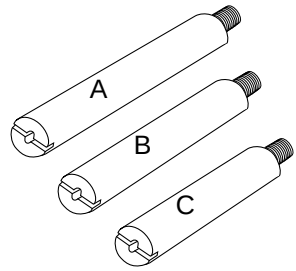
Hardware Contents

After unpacking, check for the following LCOS hardware contents:



Make sure that all items are included in your shipment before setting up your LCOS. If any items are missing or damaged, contact your shipping company or your QMS vendor. See Appendix A, “QMS Customer Support,” for product sales and support information.

The following table shows the screws and bolts you need to install the LCOS. These are included with the LCOS accessories.

Screws and Bolts			
	Examples	Description	Quantity
		Screw and washer (M4 x 12)	6
		Screw (M4 x 6)	2
		Spacer bolts (A, B, C)	A = 1 B = 1 C = 2

Tools Required

To install the LCOS, you need the following tools:

- #2 Phillips screwdriver
- Medium flat-blade screwdriver

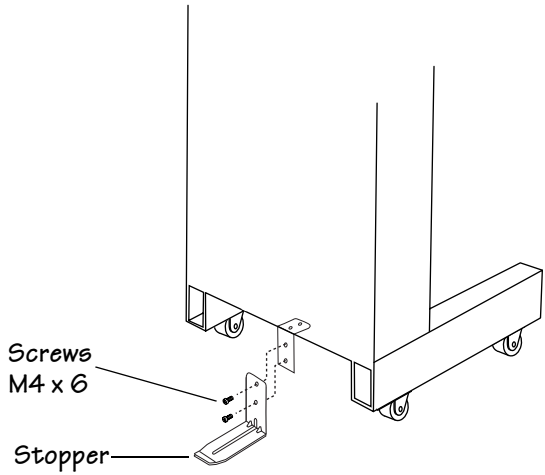
Installation Procedure

WARNING: *The 3000-sheet Large-Capacity Output Stacker weighs over 66 pounds (30 kg). Do not attempt to lift or move it by yourself.*

ACHTUNG! *Der LCOS wiegt ca. 30 kg; bitte versuchen Sie niemals, das Gerät alleine anzuheben oder zu tragen.*

After unpacking is complete, use the following procedure to install the LCOS.

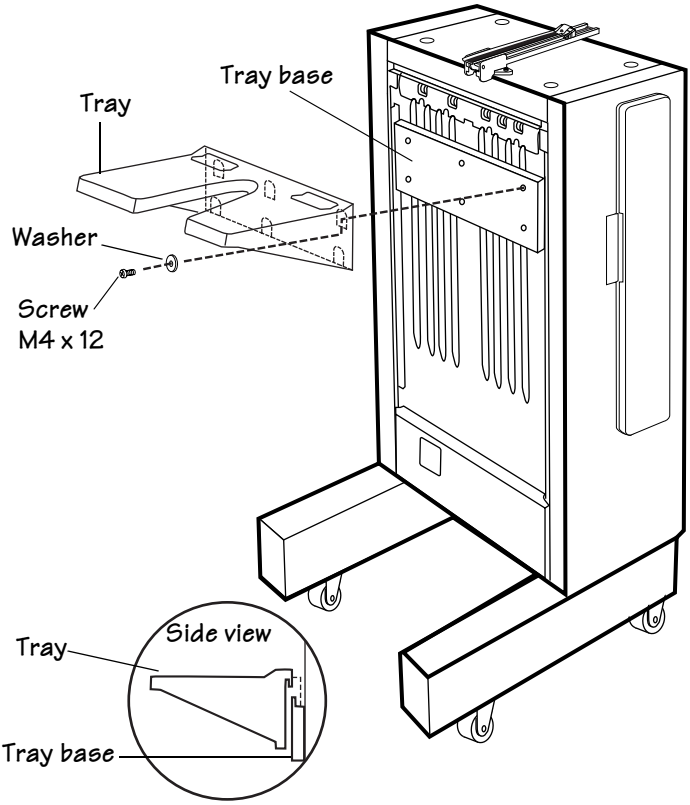
1 **Attach the stopper to the lower rear of the LCOS using the two screws (M4 x 6).**



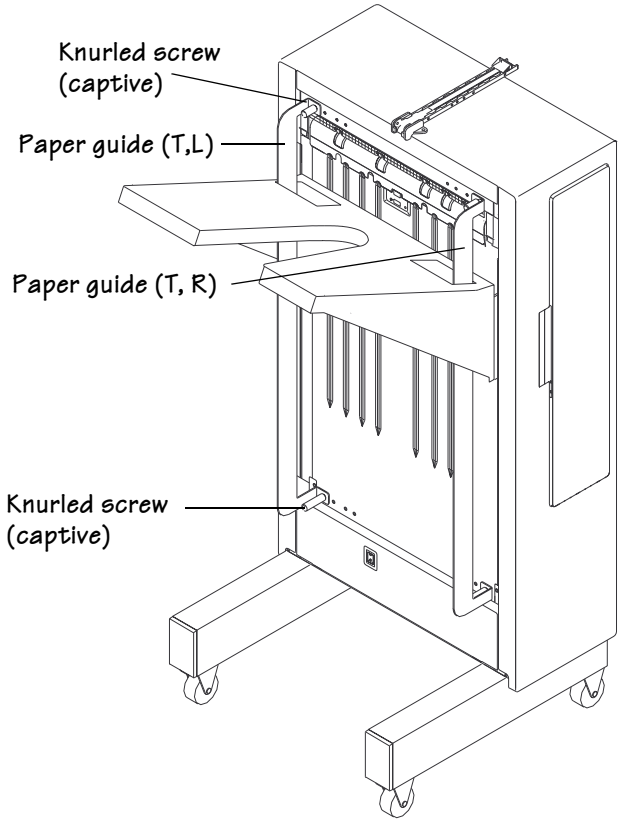
» **Note:** *The stopper prevents the LCOS from tipping backward.*

2 **Slip the hooks on the back of the tray over the tray base, and then attach the tray to the tray base using the six screws (M4 x 12) and washers.**

» **Note:** *The tray has six pre-drilled holes for the screws.*



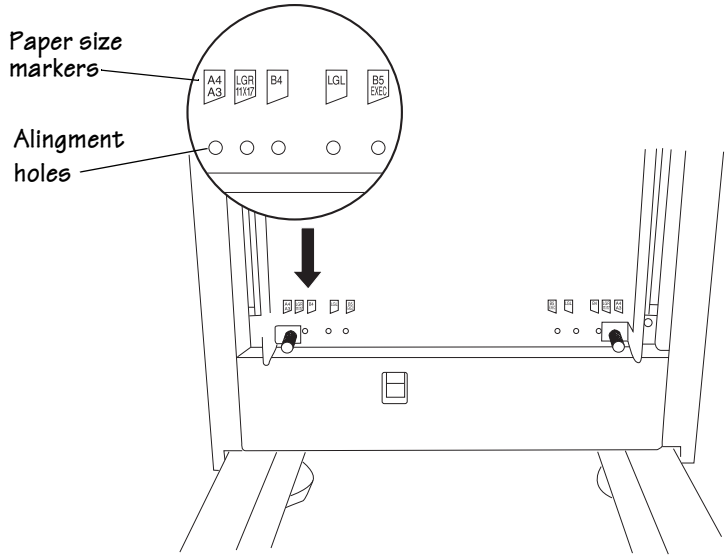
3 Locate the left paper guide, and slide it through the left slot of the paper tray.



The paper guides are labeled T,L for top-left and T,R for top-right. The shorter arm should be on top, and the flange should point inward.

4 Locate the paper size markers and the alignment hole that corresponds to the desired paper size.

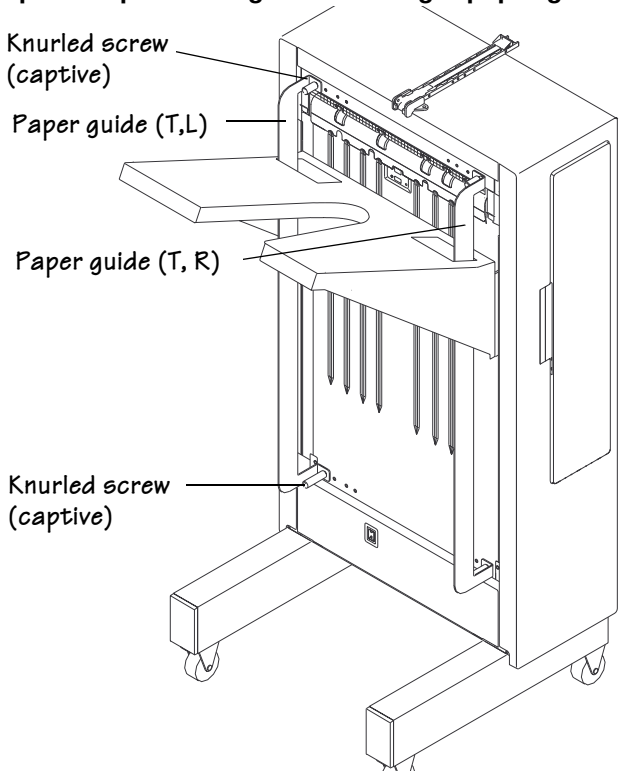
» **Note:** *Paper size markers appear on both the top and bottom of the LCOS.*



» **Note:** *When you first install the LCOS, we recommend that you set the paper guides as far apart as possible (A3/A4 setting). There is no need to adjust the guides unless the LCOS experiences paper stacking problems.*

5 Using the paper size markers as a guide, attach the paper guide to the LCOS with the knurled screws.

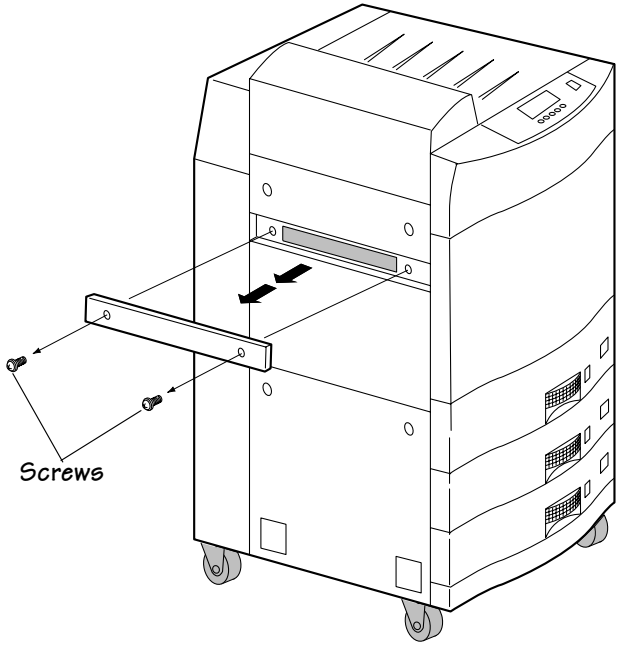
6 Repeat steps 3 through 5 for the right paper guide.



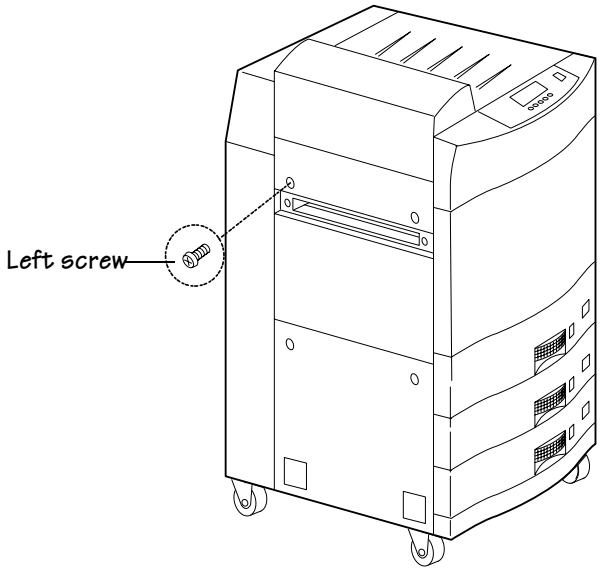
Preparing the Printer

After assembling the LCOS, prepare the QMS 4060 Printer for attachment of the LCOS.

1 Remove the paper output cover from the printer by removing two screws.

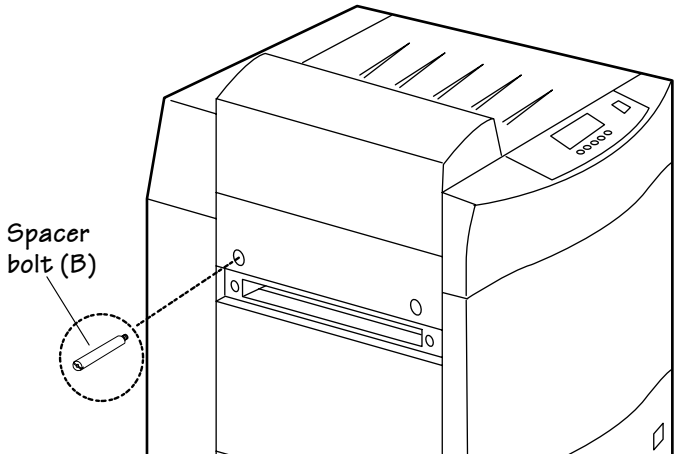


2 Remove the left screw in the upper cover.

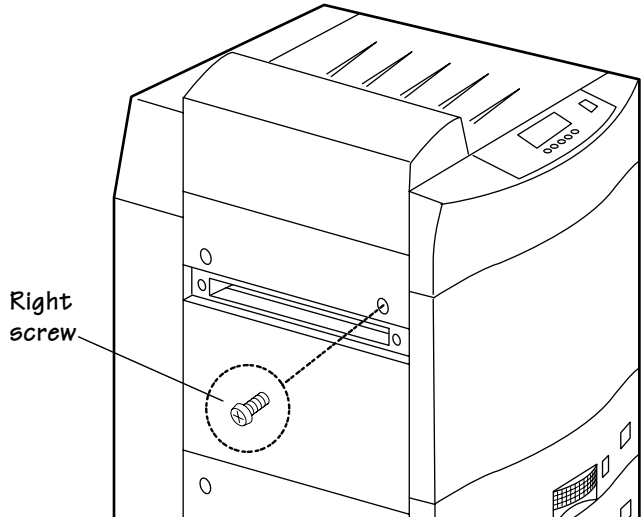


3 Insert spacer B bolt into the hole in the upper cover where you just removed the screw.

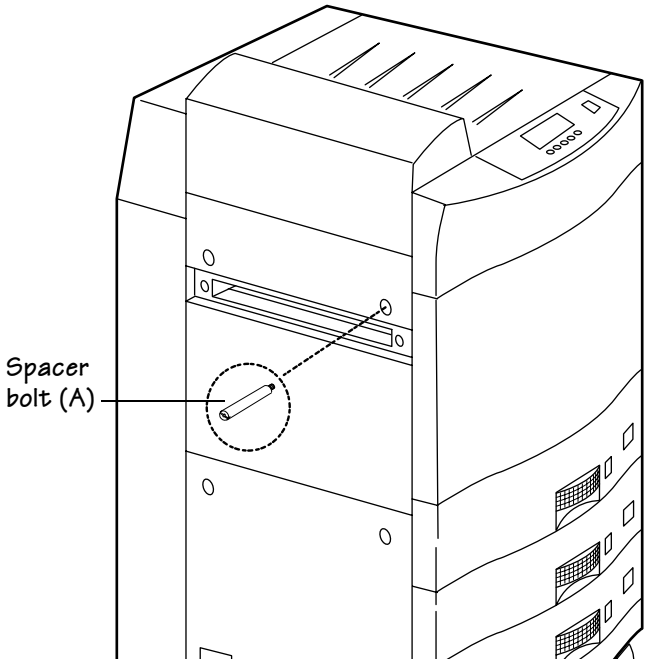
» **Note:** *The bolts are labeled. Make sure you use the correct bolt.*



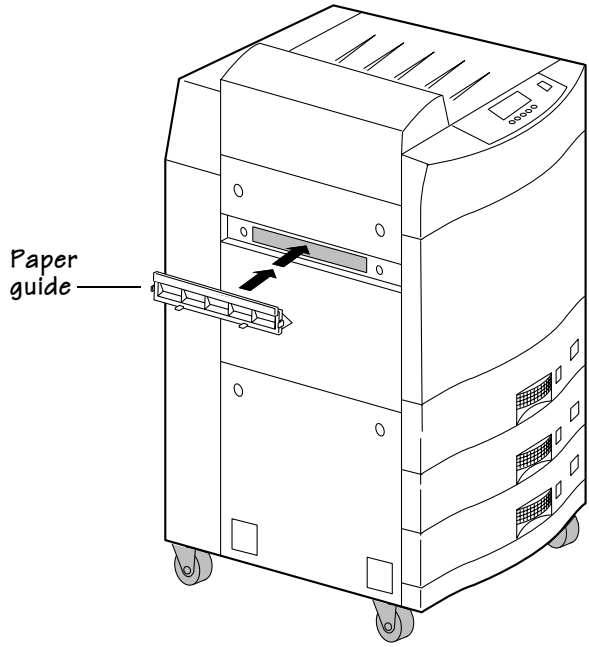
4 Remove the right screw in the upper cover.



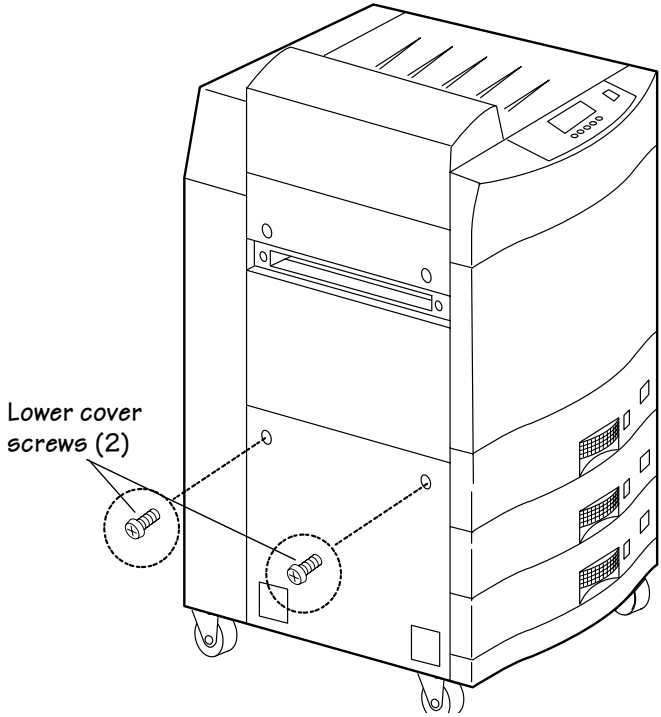
5 Insert spacer bolt A into the hole where you just removed the screw.



6 Snap, the paper guide into place.

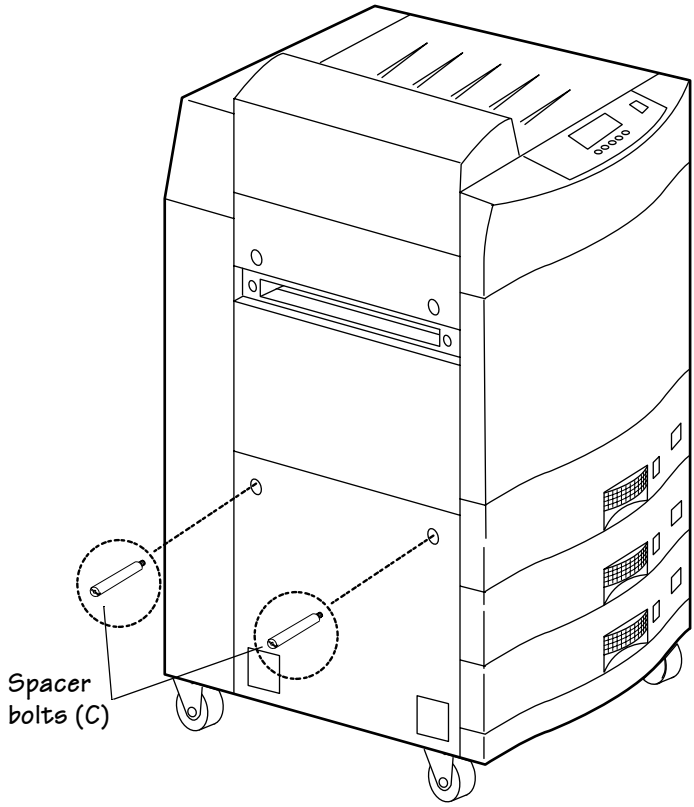


7 Remove the two screws in the lower cover.

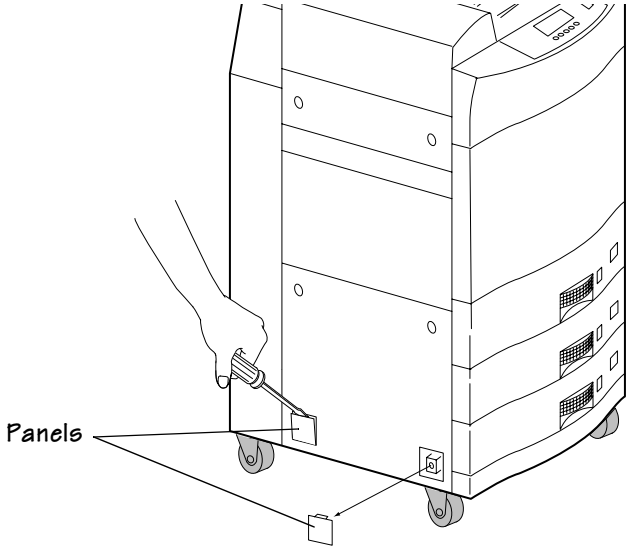


8 Insert the two spacer bolts (C) into the lower cover holes where you just removed the screws

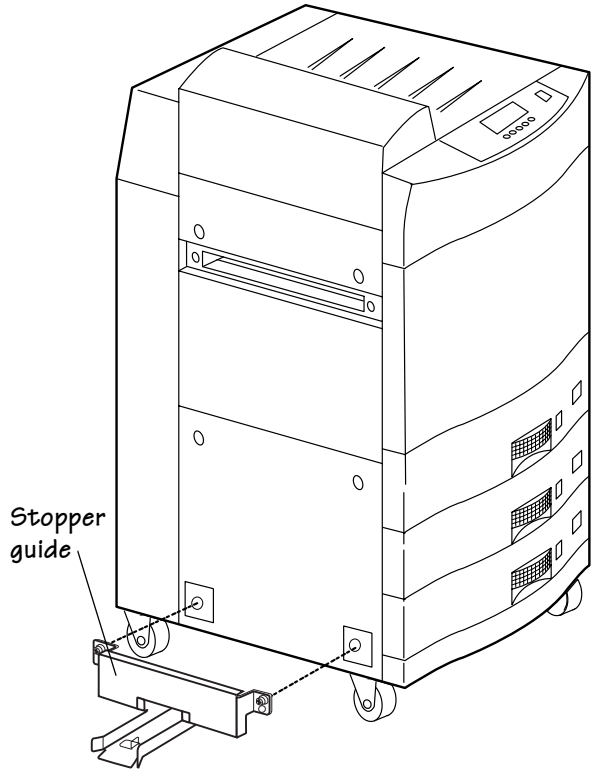
» **Note:** *The bolts are labeled. Make sure you use the correct bolt.*



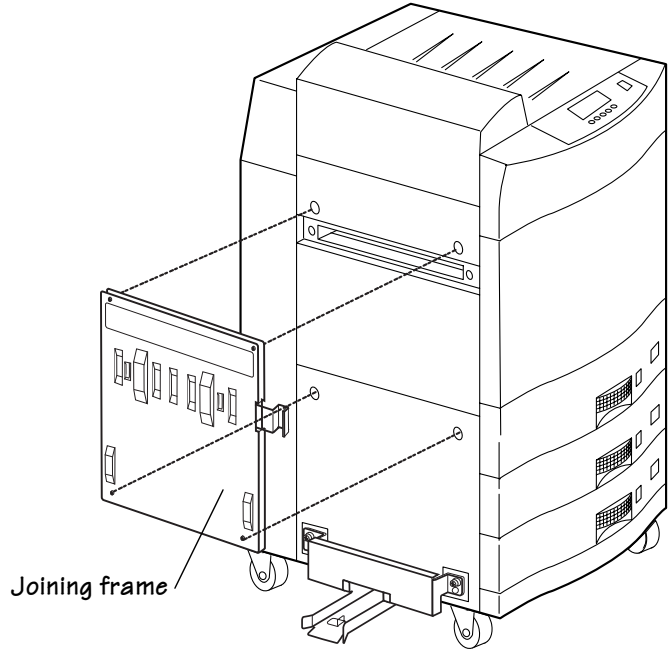
9 Use a small flat-bladed screwdriver to pop out the two small panels from the bottom cover.



10 Use the two captive screws to install the stopper guide where the square panels were located.



11 Use the four captive screws on the joining frame to attach the joining frame to the spacer bolts.

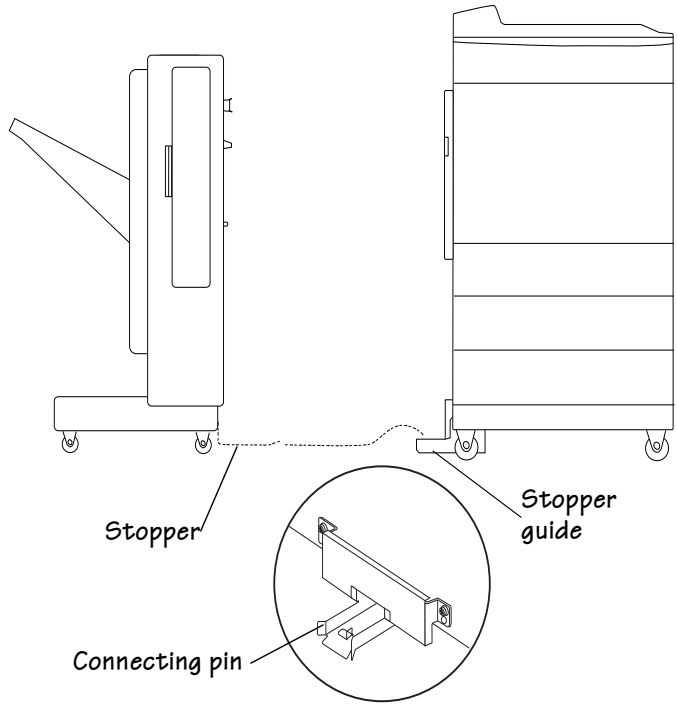


Connecting the 3000-Sheet LCOS to the Printer

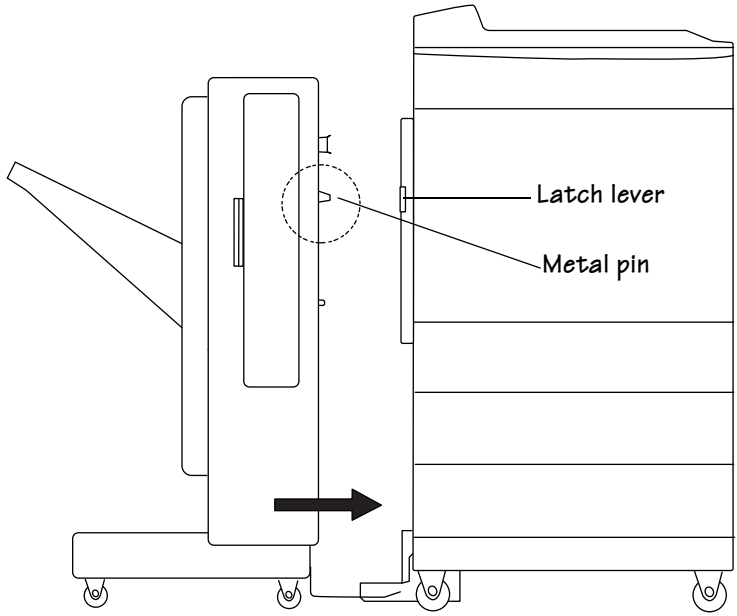
After assembling the LCOS and preparing the printer, you're ready to attach the LCOS to the printer.

1 Roll the two units together.

2 Lift the LCOS a little to make sure that the connecting pin on the stopper guide is aligned with the stopper hole on the LCOS, and then push the LCOS against the printer.



The two metal pins on the back of the LCOS are connected to the corresponding holes in the joining frame, and the printer latch is engaged.

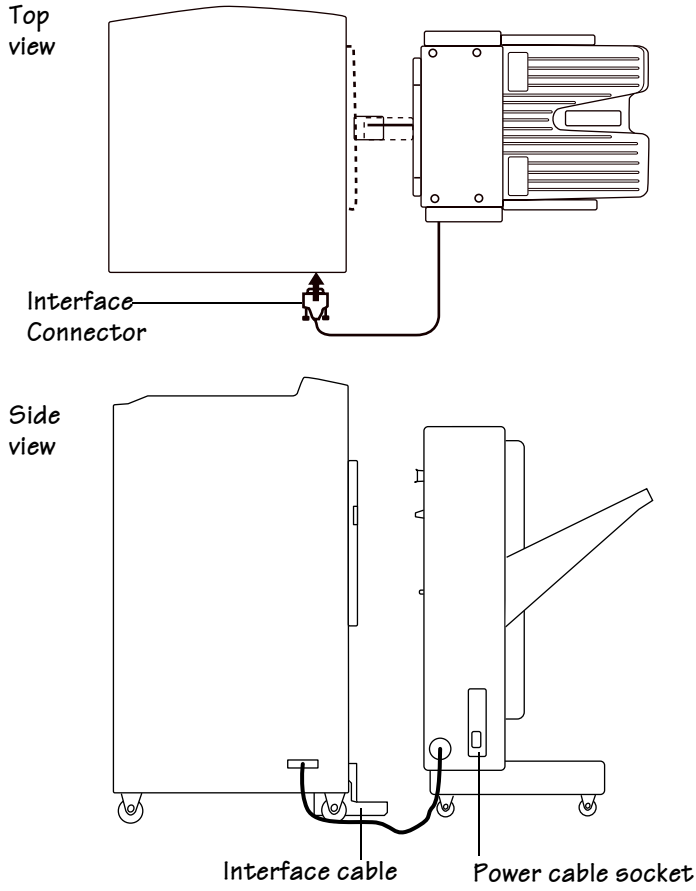


» **Note:** *To disconnect the LCOS from the printer, pull the latch lever towards you and move the LCOS away from the printer.*

Connecting Cables and Turning on the LCOS

Once the LCOS and printer are attached, you're ready to connect the interface cable and power cable.

1 Plug the interface cable from the LCOS into the connector on the back of the printer near the bottom.



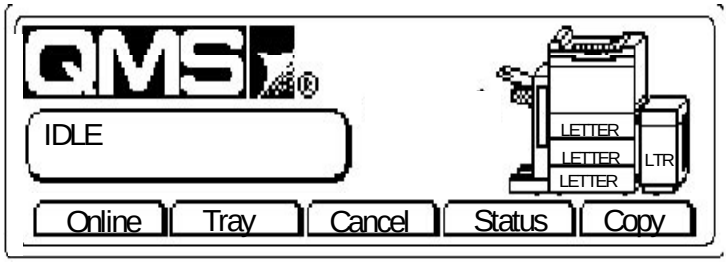
2 Plug one end of the power cable into the LCOS and the other end of the cable into a grounded outlet.

3 Turn on the LCOS power switch.

The power switch is on the lower-front of the LCOS. It takes a few seconds for the LCOS to perform power-up diagnostics.

4 Turn on the printer.

5 Check the printer display panel for the LCOS graphic. This lets you know the LCOS is connected properly.



6 Select the LCOS as the output bin through the Operator Control/Outputbin configuration menu.

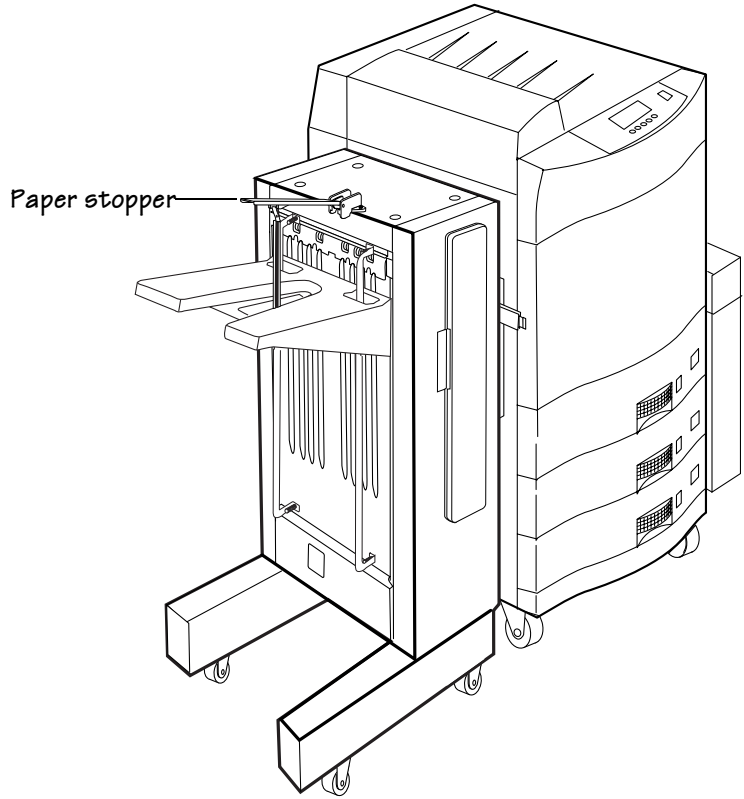
Using the 3000-Sheet Large-Capacity Output Stacker

This section provides information on how to adjust the paper stopper and paper guides on the LCOS.

Adjusting the Paper Stopper

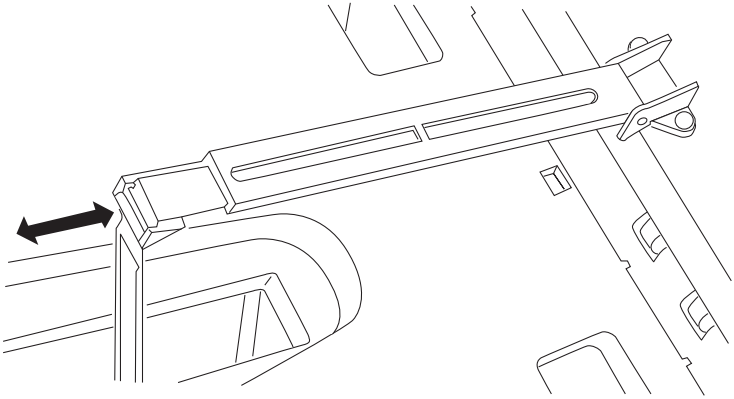
After you install the 3,000-sheet LCOS, adjust the paper stopper to fit the size of paper you're using.

1 Locate the paper stopper on top of the LCOS and position it as shown.



2 Locate the paper size markers on the stopper, and slide the paper stopper to the desired paper size

» **Note:** *If you're printing on A3 or Ledger paper, you don't need the paper stopper. Lift the paper stopper up and out of the way.*



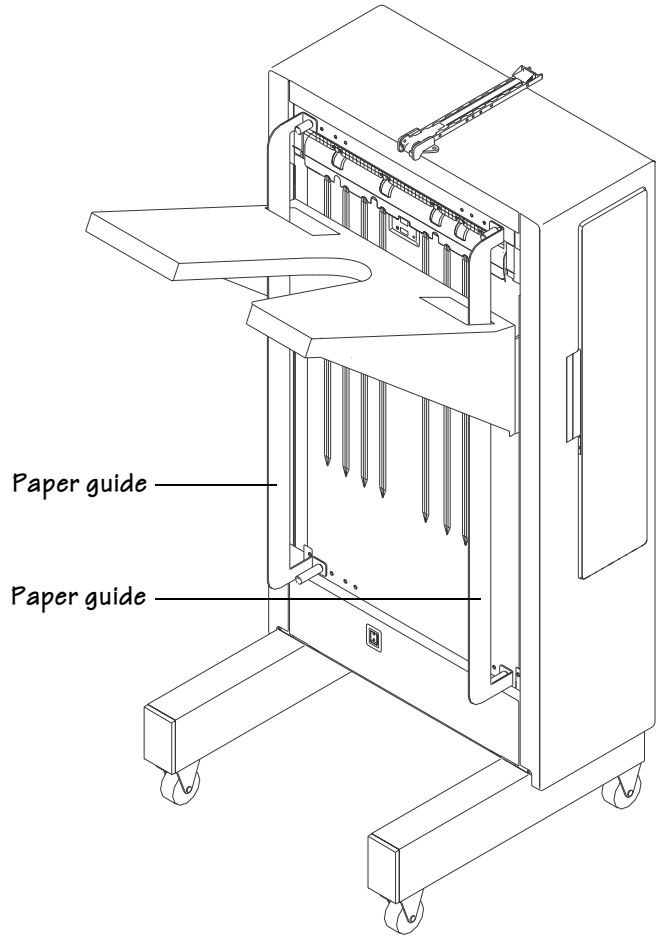
Paper size choices are Legal, Executive, B5, and A4/LTR.

Adjusting the Paper Guides

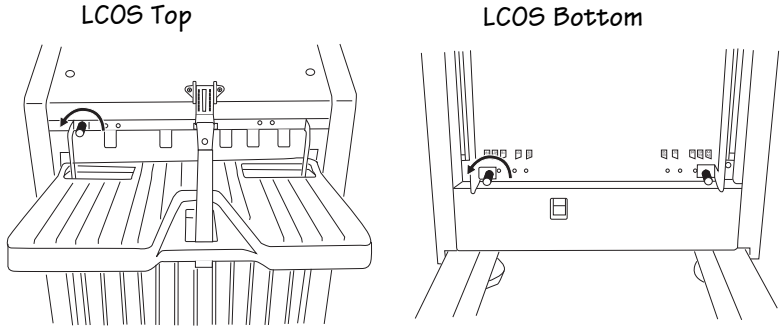
» **Note:** *We recommend that you set the paper guides as far apart as possible. There is no need to ajust the guides unless the LCOS experiences paper stacking problems.*

1 Locate the paper guides on the LCOS.

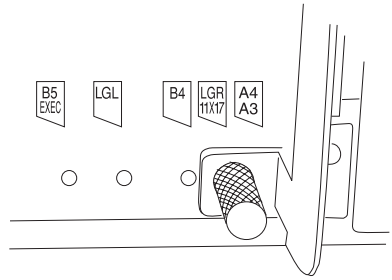
There are two paper guides, one on each side of the LCOS.



2 Release a guide by unscrewing the knurled screws (captive) that connect the guide to the top and bottom of the LCOS.



3 Use the paper size markers at the top and bottom of the LCOS to reposition the guide to the desired paper size.

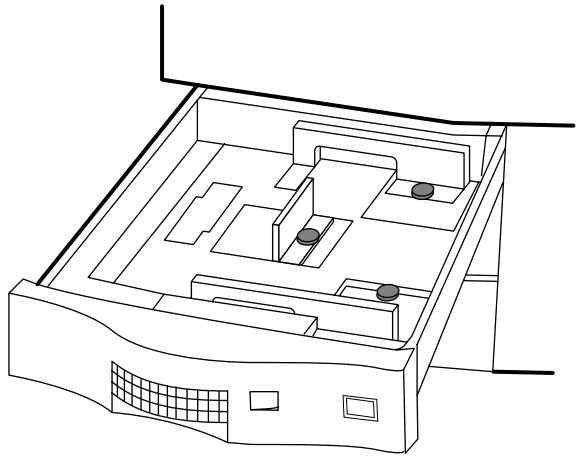


4 Tighten the knurled screws (captive) to reattach the guide to the printer.

5 Repeat this procedure for the guide on the other side of the LCOS.

Make sure that you select the same paper size for each guide.

Custom Tray



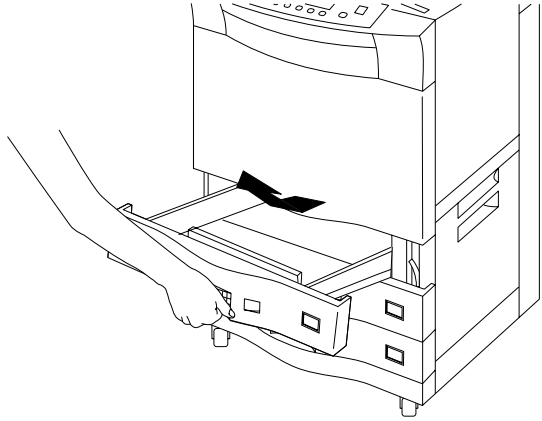
The custom input tray on your QMS 4060 Print System allows you to print three more paper sizes—Statement, B4(ISO), and B5(ISO). This tray also supports all the normal paper sizes supported on the standard trays

Installation of the tray involves replacing one of the standard input trays. Follow this procedure to install and set up your custom tray.

Custom Tray Installation

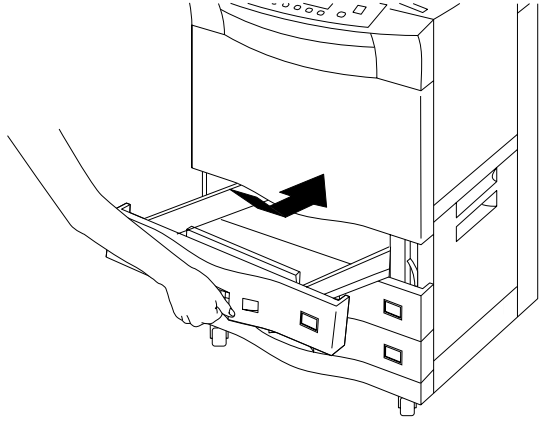
1 Pull out the standard tray until it stops.

2 Lift up and remove the paper tray.

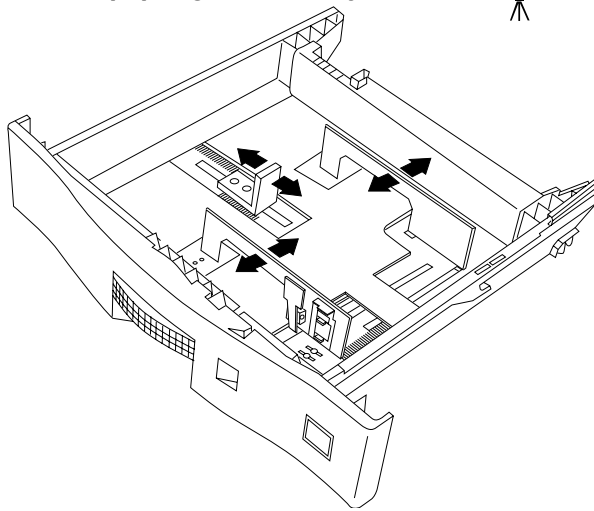


» **Note:** *The custom tray can be installed in any of the three standard tray positions—upper, middle, or lower. The printer can support up to three custom trays.*

3 Insert the custom tray at an angle, then lower it and push it in.

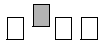


4 Slide the paper guides to fit your media.



5 Place your custom sized media in the custom tray. The height of the media stack should not exceed the full mark on the paper guides.

6 Set up the tray media size tabs on the rear of the custom tray. Use the following chart for reference or the label attached to the paper tray.


:Length 7.16” to 8.5” (182mm to 215.9mm)
:Width 3.93” to 11.69” (100mm to 297mm)

:Length 11.69” to 17” (297mm to 431.8mm)
:Width 3.93” to 11.69” (100mm to 297mm)

:Length 8.5” to 11.69” (215.9mm to 297mm)
:Width 3.93” to 11.69” (100mm to 297mm)

- Tab is pushed forward

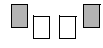
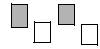
- Tab is pushed backward

7 Access the Operator Control/Custom Input Bins configuration menu to select the paper size for the custom input bin.

Standard Paper Sizes

Your custom tray can also feed standard paper sizes. You must make sure that your application paper size setup is the same as the paper that is loaded in the custom tray. Follow the tab setting in this table to set up the custom tray for standard media sizes.

Tray Tabs	Standard Media Size
	Letter, Executive, A4, A5, Statement

Tray Tabs	Standard Media Size
	B4, Legal, 11”X17”, A3, B4(ISO),
	B5, B5(ISO)

Access the Operator Control/Custom Input Bins configuration menu to select the standard paper size for the custom input bin.

▲ **Caution:** *If you do not set up the paper size in the Operator Control/ Custom Input Bins menu, the printer could select an incorrect paper size and your image will not be positioned correctly on the page.*

Security Key

▲ ***Caution:*** *Even though both the security and serial options have a DB-9 interface, the connectors are keyed and they can’t be interchanged. Make sure that you install the security key only in the slot marked* ***SECURITY*** *on the back of the printer.*

An optional security key is available to password protect the Operator Control and the Administration menus. When a security key is installed, the Installation menu appears in the printer's menu structure.

What’s in the Kit?

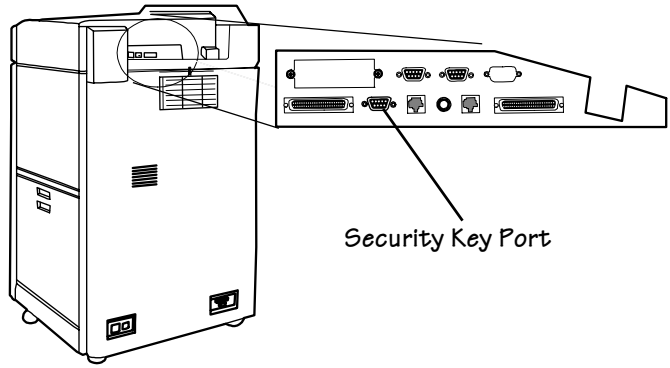
- A security key (9-pin connector labeled Security)

Procedure

The security key port is located on the back, left side of the printer. To install a security key, use the following procedure:

1 **Make sure the printer is off line.**

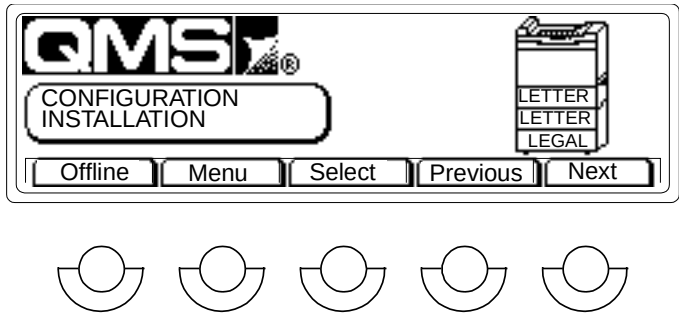
2 **Insert the security key into the port.**



3 **Press the Online button to take the printer off line.**

4 **Press the Menu button.**

5 **Press the Next button until the message window displays**



6 **Press the Select button.**

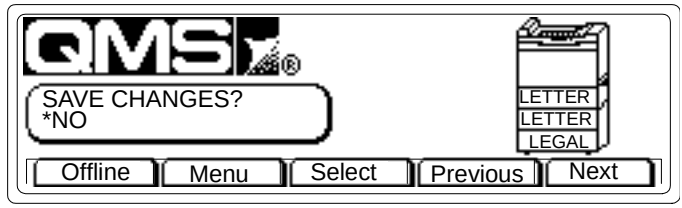
7 **Press the Next button to view the following options: Operator Passwrd, Use Operator Pwd, Admin Password, and Use Admin Pwd.**

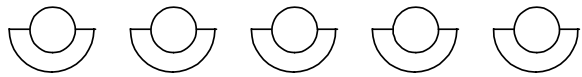
8 **To protect the Operation menu, use the Operator Passwrd option to select the password, and then Use Operator Pwd to turn on this option.**

9 **To protect the Administration menu, use the Admin Password option to select the password, and then Use Admin Pwd to turn on this option.**

» **Note:** *Keep in mind that this same password protects the Admin mode of Remote Console, available through CrownAdmin and CrownAdmin 2.*

10 **Once passwords are activated, press the Menu button to exit the menu. The following message is displayed**





11 **Press the Next button until YES is displayed on the bottom line of the display window.**

12 **Press Select and remove the security button from the port.**

Once a menu is password protected, you cannot enter the menus or make changes in it until you enter a valid password. You'll know whether or not the menu is password protected when you press the Select button when trying to enter the menu structure. If the menu is password protected, ENTER PASSWORD appears on the message window. Passwords are entered as alphanumeric values. If you enter an invalid password, the message window

flashes INVALID PASSWORD for three seconds, and then returns to the parent menu. If you forget the password, your system administrator can easily recover it by following the installation procedure again. When the correct password is entered, the submenu displays. The password for these two menus may be the same or different. See “Installation Menu”in chapter 4 of the *Reference* manual for more information.

» **Note:** *Password protection does not prevent software commands from changing functions.*

BuzzBox Lite

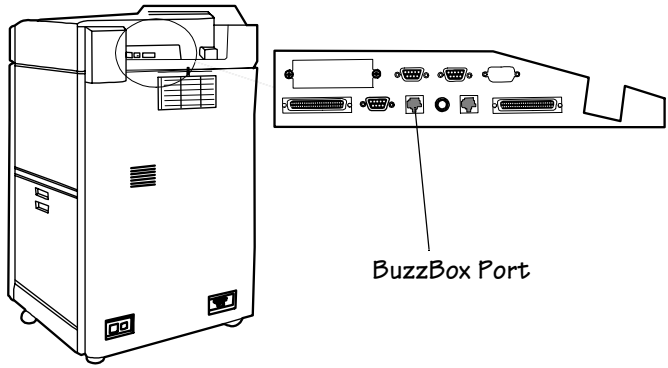
BuzzBox Lite is a printer accessory that warns you with a buzzer and/or a blinking light any time the printer goes off line. This means you’re alerted to print job interruptions, such as empty paper trays.

What’s in the Kit?

- BuzzBox Lite unit
- RJ-11 cable (10 feet)
- Velcro strip

Installing BuzzBox Lite

1 **Install one end of the RJ-ll cable connector to the port labeled BuzzBox.**



2 **Attach the other end of the RJ-11 cable to the BuzzBox Lite unit.**

3 **Make sure the site you choose isn't going to**

- interfere with paper exiting the printer.
- cover any vents, doors, connectors, or labels.
- cause the BuzzBox ribbon cable to stretch or twist tightly.

4 **Use the Velcro provided to mount BuzzBox Lite where the printer operator can see and/or hear it.**

We've provided a 14-foot (4.2m) cable (and some adhesive-backed clips for securing it), but you can use up to a 500-foot/ 152m cable (RJ-11 4-pin or 6-pin).

5 **To test BuzzBox, make sure its switches are on, then press the printer's Online button.**

» **Note:** *You can set the switches in one of the following ways:*

- Set the buzzer On and the light Off
- Set the light On and the buzzer Off
- Set both the buzzer and the light On

The light flashes and the buzzer sounds until the printer is placed back on line or until the light and buzzer switches are turned off.

Using BuzzBox Lite

- When BuzzBox lights or buzzes, check the printer message window to find out what has interrupted printing. See chapter 9, “Troubleshooting Printer Problems,” of the *Operation* manual for a list of printer messages and how to respond to them.
- Remember that pressing the Online button to enter the printer configuration menu will turn on BuzzBox.

❖

7

CrownCopy

In This Chapter . . .

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Introduction

The QMS CrownCopy option consists of an image scanner and software. This feature increases the functionality of your printer, transforming it into a copier as well as a printer. The functionality of CrownCopy is already built into your printer, so using CrownCopy is as simple as making the connections and pushing the Copy button.

Print System Requirements

- At least 32 MB of memory installed on the printer.
- An internal IDE hard disk—256 MB or larger (standard)

  The printer's hard disk is used for temporary storage of the scanned image. There should be enough extra room on the hard disk to store the largest-size scanned image. The size of this image depends on the paper size and the printer resolution.

What's in the Kit

- QMS CrownCopy scanner
- Power cord (110-volt)
- SCSI terminator and interface cable
- Daisy-chain connector
- Packing list, setup instructions, and warranty and registration card
- Copy key

If anything is missing, call your QMS vendor. See appendix A, "QMS Customer Support," for locations and telephone numbers.

Installation

1 **Refer to the instructions that come with the scanner to unpack it and prepare it for use.**

2 **Ensure that both the scanner and the printer are turned off.**

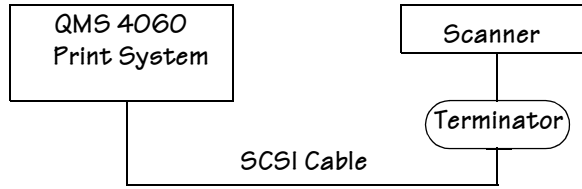
3 **Ensure that the scanner's SCSI ID is set to 5.**

4 **Locate the SCSI connector on the rear of the scanner.**

5 **If you're connecting only the scanner to the printer, use the following procedure. Otherwise, go to step 6.**

a Plug the male end of the SCSI terminator into the scanner's SCSI connector.

b Attach one end of the SCSI cable to the terminator and the other end of the cable to the printer.



c Go to step 8.

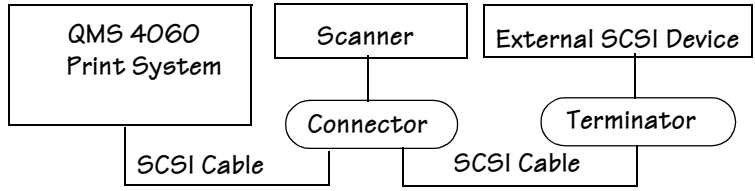
6 If you're connecting the scanner and one or more external SCSI devices to the printer, use the following procedure:

a Plug the daisy chain connector into the scanner.

b Attach one end of the SCSI cable to the daisy chain connector and the other end of the cable to the SCSI port on the printer.

c Attach one end of another SCSI cable to the daisy chain connector.

d Attach the terminator to the last external SCSI device (for example, a hard disk drive) on the bus, and plug the other end of the SCSI cable into the terminator.



7 Plug the scanner and printer, if necessary into an electrical outlet.

8 Ensure again that both the scanner and printer are turned off.

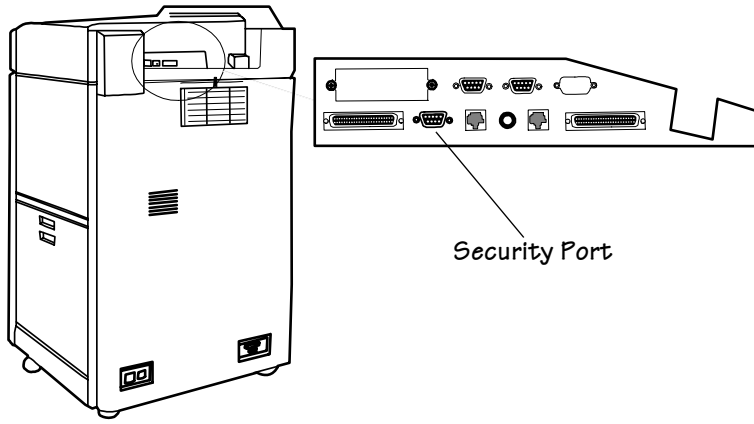
9 Turn on the scanner, wait 5 seconds, and then turn on the printer.

▲ **Caution**: *The scanner **must** be turned on first so the printer can recognize the scanner's presence.*

10 Insert the copy key into the “Security” port on the left rear of the printer interface panel.

You can’t access the CrownCopy menu unless the copy key is inserted. The printer can be either on or off.

▲ **Caution:** *Even though both the copy key and serial interface have a DB-9 interface, the connectors are keyed, and they can’t be interchanged. Make sure that you install the copy key only in the port marked “Key.”*



Your CrownCopy scanner is now ready to use. If necessary, access the printer’s Copier Menu to configure the scanner. For information on adjusting copy settings, see “Menu Configuration” on page 7-10.

Flatbed Scanning

» **Note:** *For optimum performance change the printer default resolution to 600 dpi by using the Administration/Engine/Default Resolution menu setting.*

▲ **Caution:** *CrownCopy requires a minimum of 32 MB of RAM installed on the printer.*

1 **Turn on the scanner, wait 5 seconds, and turn on the printer.**

▲ **Caution**: *The scanner **must** be turned on first so the printer can recognize the scanner's presence.*

2 **Insert the copy key in the "Security" port on the printer's interface panel.**

▲ **Caution**: *Even though both the copy key and serial interface have a DB-9 interface, the connectors are keyed, and they can't be interchanged. Make sure that you install the copy key only in the port marked "Security."*

3 **When the scanner is ready, place a document face down on the scanner glass.**

4 **Make sure the printer is on line, and then press the Copy key on the printer's control panel.**

The control panel message window displays

```
COPIER MENU
COPY
```

5 **Use the Copier Menu/Copy Mode/Scan Size menu to set the scan size of the document.**

See "Menu Settings" on page 7-13 for details.

6 **Press the Select key to display**

```
COPY
READY TO COPY
```

7 **Press the Select key again to begin copying.**

8 **When the copying is complete, remove the document.**

ADF Scanning

Memory Configuration

To print multiple copies of multiple sheets from the scanner's automatic document feeder (ADF), we recommend that your printer have a hard disk installed.

The printer's hard disk is used for temporary storage of the scanned image. There must be enough free space on the hard disk (at least 15 MB) to store the largest-size scanned image. The size of this image depends on the paper size and the printer resolution.

This section identifies the amount of Display List memory required to print multiple copies of multiple sheets (with or without collation) from the ADF.

1 **Enable disk swapping (Administration/Memory/Enable Disk Swap menu).**

2 **Increase the Display List memory by 60 MB/60,000 KB (Administration/Memory/Manual Config/K Mem Display menu).**

   The printer automatically reboots when you press the Online key.

3 **Choose collation, if necessary.**

4 **Begin the copying/scanning procedure (Copy key).**

5 **If the printed output is not correctly collated, duplexed, and/or stapled, increase the Display List memory in 10 MB/10,000 KB increments until the output is correctly printed.**

Procedure

» **Note:** *For optimum performance change the default resolution to 600 dpi by using the Administration/Engine/Default Resolution menu setting.*

▲ **Caution:** *CrownCopy requires a minimum of 32 MB of RAM installed on the printer.*

1 Turn on the scanner, wait 5 seconds, and turn on the printer.

▲ **Caution**: *The scanner **must** be turned on first so the printer can recognize the scanner's presence.*

2 Insert the copy key in the "Security" port on the printer's interface panel.

▲ **Caution**: *Even though both the copy key and serial interface have a DB-9 interface, the connectors are keyed, and they can't be interchanged. Make sure that you install the copy key only in the port marked "Key."*

3 When the scanner is ready, make sure that no documents are on the scanner glass, and then prepare the ADF.

4 To guard against paper-feed errors, angle the sheets of the document to be copied.

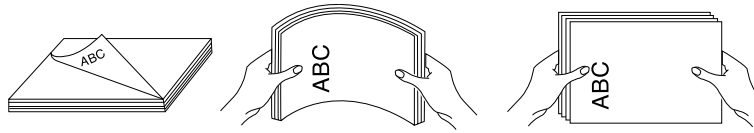
a Place the document face down.

b Lift approximately 0.25"/4 mm or less of the sheets with both hands.

c Holding the sheets tightly with your left hand, bend them as illustrated.

d Grip the sheets tightly with your right hand, loosen the grip of your left hand, and then straighten the sheets as illustrated.

e Repeat steps b-d for the entire document.



5 Move the paper feed guides on the ADF so that they're approximately 0.25"/5 mm wider than the document.

6 Place the document to be copied face down in the input paper chute, putting the ends of the bottom 2 or 3 sheets into the automatic feeder.

Slide the stack forward until it rests against the ADF sensor. The sensor is a small plastic arm inside the ADF. The ADF can be loaded with up to 50 sheets of A4-, legal-, or letter-size paper.

▲ **Caution**: *Do not feed any of the following through the ADF:*

- *Paper with clips or staples*
- *Paper with wet ink*
- *Paper with folds, tears, notches, or curls*
- *Paper with an inconsistent thickness, such as envelopes*
- *Very thin paper*
- *Paper not square or rectangular in shape*
- *Paper smaller than A5 size or larger than A4 width*
- *Tracing, coating, carbonless, or photographic paper*
- *Items other than paper, such as transparencies, metal sheets, or cloth*
- *Important documents that must not be damaged*

7 Close the paper guides until they touch the sides of the paper stack.

» **Note:** *Skewing may occur if a gap exists between the guides and the document.*

8 **Make sure the printer's Online light is on.**

If the Online light is not on, press the Online key to put the printer on line.

9 **Press the Copy key.**

In the printer's message window you should see

```
COPIER MENU
COPY
```

10 **Press the Select key, and you should see**

```
COPY
READY TO COPY
```

11 **Press the Select key again and the scanner should begin copying your document.**

▲ **Caution**: *Do not press on or open the scanner cover during the copy process.*

12 **When the copying is complete, remove the document.**

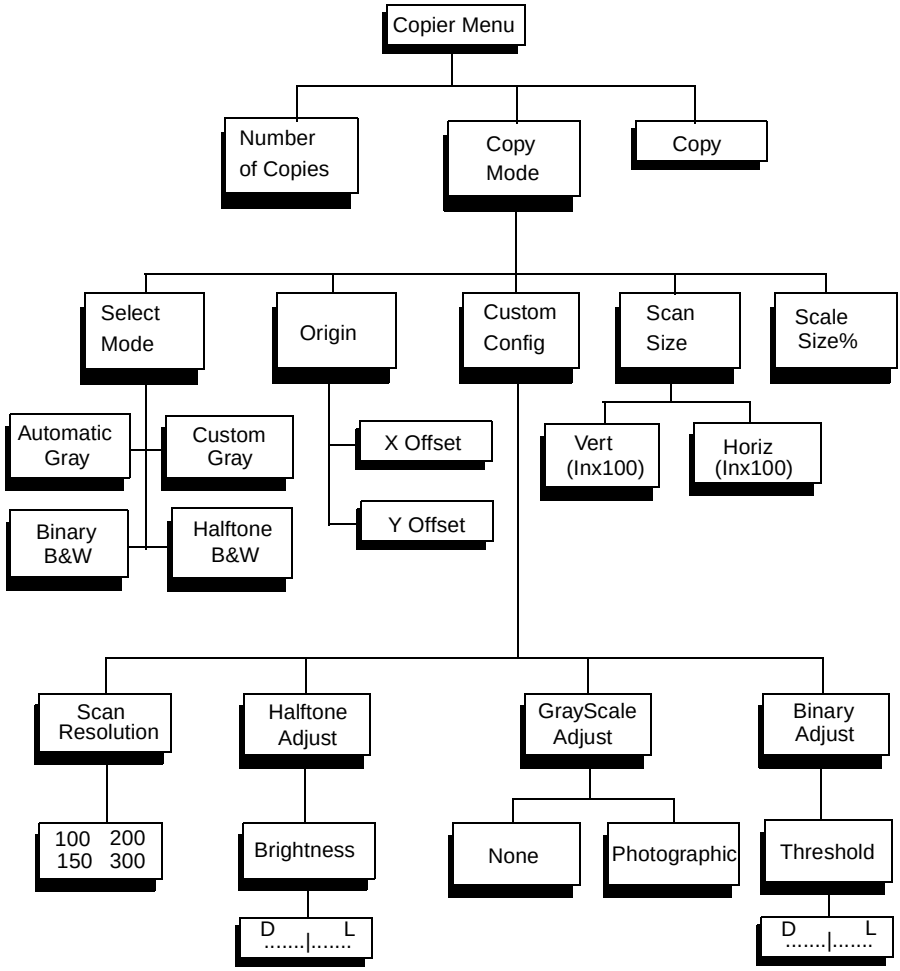
Menu Configuration

» **Note:** *Status messages don't display when you're in the Copier menu. However, they will display again when you exit from the menu and put the printer back on line.*

The Copier Menu

When the printer is on line, press the Copy key on the printer's control panel once to enter the Copier Menu.

» **Note:** *The Copy key must be inserted in the "Security" port on the printer interface panel before you can access the Copier menu.*



Copy Quality Decisions

The quality of your copied image depends on several factors. You must consider these factors when judging the output quality of your copied image. The quality of the copy can be adjusted by settings on the CrownCopy menu. The factors involved in copy quality are

- The original's print quality
- The content of the original—text, images, or both
- The size of the original
- The speed of your copy output
- The medium of the original—for example, photographs, magazine, laser printer, or newspaper

After considering these factors you may want to experiment with different settings to see which setting gives you the best quality output at the best speed. Here are some sample situations and menu settings that can be used to improve output quality.

- You're copying a newsletter with text and halftone photos. Use Custom Gray in Photographic mode for best quality. You may get faster output using Halftone B/W at a higher resolution.
- You're copying original forms containing only text. Use Binary B/W mode for best quality for text only. You may experiment with Threshold and Scan Resolution to increase the quality and maintain the copy speed.
- You're copying a photograph to distribute around the office. Use Custom Gray with GrayScale Adjust in photographic mode. You may improve the quality by adjusting scan resolution but you might slow it down. You can increase speed slightly by using adjusting Scan Size to crop the image.
- You're copying a document that has text, line drawings with some grayscale details and you need the copies in a hurry. Use Halftone B/W and adjust Brightness and Scan Resolution to get the best output at a faster speed than Grayscale Mode.

Making Changes to the CrownCopy Menu

To access the Copier Menu, press the Copy key once. Then use the Next or Previous key to scroll across the top level menus (Copy, Number of Copies, and Copy Mode). To enter a lower-level menu or select a menu option, press the Select key. Use the Menu key to back out of the menu and return to `IDLE` after you have made your selections or after you have completed copying.

» **Note:** *When you press the Copy key you gain access to the CrownCopy menu and the copy option. To return the printer to normal operation you must exit this menu by pressing the Menu key. Error messages that normally occur (such as jams) will not appear on the display until you exit the CrownCopy menu. Copy menu changes stay in effect only for the next scan executed. The number of copies is reset to 1 one minute after the last key press or after a print job is complete.*

Menu Settings

Copy options are accessed through the printer's control panel. See "The Copier Menu" on page 7-10 for a diagram of the Copy menu. See chapter 4, "Printer Configuration," of the *Reference* for detailed configuration menu and control panel information.

▲ **Caution:** *Each configuration change you make affects the quality of your printed output significantly. Therefore, we recommend changing* ***only one setting*** *at a time, printing a test print, and then determining if further configuration changes are necessary.*

Copy

Menu	Copier Menu/Copy
Purpose	Use this option to make a copy.
Choices	Copy When the printer is on line, press the Copy key to access the copy menu.
Notes	The default scan resolution is 200 dpi. See “Scan Resolution” on page 7-17 for information on increasing scan resolution.

Number of Copies

Menu	Copier Menu/Number of Copies
Purpose	Use this option to set the number of copies you want.
Choices	1 to 999. Each digit is set individually. Use the Select key to move the cursor to the digit you want to change, and then use the Next key to increase it or use the Previous key to decrease it. Use the Menu key to move to the previous digit in the number. Once the number you want is set, press the Select key to save it.
Default	1
Notes	The number of copies is reset to 1 one minute after the last key press or after a print job is complete. When you’re printing multiple copies, subsequent copies are printed faster than the first copy.

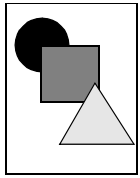
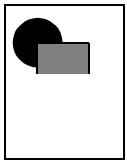
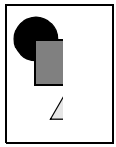
Select Mode

Menu	Copier Menu/Copy Mode/Select Mode
Purpose	Use this menu to specify what type of copy is being made so the printer can optimize for this type output.
Choices	Automatic Gray, Custom Gray, Binary B/W, Halftone B/W
Default	Automatic Gray
Notes	Automatic Gray—Sets color depth to 8-bit gray and scan resolution to 200 dpi. Use this option when copying documents that are color or shades of gray. Best quality output for images. Custom Gray—Allows you to adjust grayscale values. » **Note:** In order to change the default grayscale value, you **must** choose the Custom Gray option in this menu. Binary B/W—Allows you to adjust binary thresholds. Good for text. Halftone B/W—Allows you to adjust the brightness of halftone images.

Origin

Menu	Copier Menu/Copy Mode/Origin
Purpose	Use this menu to specify where the copy is to begin scanning the source material
Choices	X Offset (0—850) Y Offset (0—1100)
Default	Both choices are set to 0
Notes	This option assigns the top-left corner of the image, so printing with defaults places the image at the top leftmost corner of the page.

Scan Size

Menu	Copier Menu/Copy Mode/Scan Size		
Purpose	Select the width (horizontal size) and length (vertical size) from the origin of the image to be scanned to crop (scan only part of) an image or to reduce the copying time for images smaller than letter or A4.		
Choices	**Supported Size**	**Horiz. (in x 100)**	**Vert. (in x 100)**
	Letter	850	1100
	Legal	850	1400
	A5	582	827
	B5	715	1011
	A4	827	1169
Default	Horiz. (in x 100)	850 (8.5")	
	Vert. (in x 100)	1100 (11.0")	
Notes	These values must be selected if you are using the automatic document feeder (ADF) as well as the flatbed for copying. The more you crop out of a scan, the less time it takes to process and print. For example, if you need to copy a photograph, you can get faster copies by placing it at the upper-right corner of the scanner bed and cropping the scan to fit the dimensions of the photograph (the scanner bed has rulers that mark inches.)		
Examples	You can also use the Scan Size menu to crop an image. Cropping is done from right and bottom sides of the page. For example, look at the image shown to the right:  If you place this image on the scanner bed and set the Copier Menu/Copy Mode/Scan Size Vert. (in x 100) menu to 400, you'll get this:  If you place this same image on the scanner bed and set the Copier Menu/Copy Mode/Scan Size Horiz. (in x 100) menu to 550, you'll get this: 		

Scale Size%

Menu	Copier Menu/Copy Mode/Scale Size%
Purpose	Use this to change the scale value from the current value in the positive or negative direction.
Choices	50-200% dpi range
Default	100 dpi
Note	Original of source will be printed at the upper left of the page. The bottom of the page may be cropped. If you want to scale the copy, you must set the Scale Size% first and then press the Copy key. Press the Online key *only* after copying has finished. Pressing Online before pressing Copy does not save the scaling value.

Scan Resolution

Menu	Copier Menu/Copy Mode/Custom Config/Scan Resolution
Purpose	Use this menu to specify what resolution the scanner should use for custom scan settings.
Choices	100, 150, 200, or 300 dpi Choose a scan resolution that is at most half of the printer resolution being used. The higher the scan resolution, the more detailed the copy output (as long as the printer resolution being used is double the scan resolution). Also, a higher scan resolution increases copying time, because of the increased amount of data that must be scanned and sent to the printer for processing. (Each time the scan resolution is doubled, the amount of information that is scanned and printed is quadrupled.)
Default	200 dpi
Note	In order to change the default scan resolution, you must choose the Custom Gray option in the Copier/Copy Mode/ Select Mode menu.

Halftone Adjust/Brightness

Menu	Copier Menu/Copy Mode/Custom Config/Halftone Adjust/ Brightness
Purpose	Allows you to adjust the brightness of halftone mode scans. This setting is enabled by the Select Mode/Halftone B/W menu.
Choices	15 brightness settings; each setting makes an incremental brightness change of about 2%. D—Moving the setting in this direction decreases brightness. It darkens the overall image making light and dark areas appear darker. L—Moving the setting in this direction increases brightness. It lightens the overall image making light and dark areas appear lighter.
Default	The middle setting
Notes	Use the Previous key to move the message-window cursor from the center towards the left to a darker (less bright) ‘D’ setting or use the Next key to move the cursor towards the right to a lighter (brighter) setting ‘L’. Each increment of change in the brightness setting is significant in output quality. Therefore, we recommend that you change the setting by only one level, print out a test copy, and then determine if further modification is necessary.

GrayScale Adjust

Menu	Copier Menu/Copy Mode/Custom Config/GrayScale Adjust
Purpose	Allows you to specify whether gamma correction is used.
Choices	None and Photographic
Notes	None—If this is selected, then data from scanner is directly printed. This provides better quality for copying photocopies of text and line art. Photographic—This option provides a gamma table adjustment for the image. This should be used if you are copying photographs.

Binary Adjust/Threshold

Menu	Copier Menu/Copy Mode/Custom Config/Binary Adjust/ Threshold
Purpose	Allows you to adjust the detection point for black vs. white in Binary B/W mode.
Choices	There are 15 levels of threshold available. Each level changes the threshold slightly.
Notes	Use the Previous key to move the message-window cursor from the center (the default position) towards the left to a 'D' Darker (less bright) setting, or use the Next key to move the cursor towards the right to a Lighter 'L' (brighter) setting. Increasing the threshold makes light and dark areas in the halftone appear lighter, while decreasing the threshold makes light and dark areas appear darker. Each increment of change is significant in output quality. Therefore, we recommend that you change the setting by only one level, print out a test copy, and then determine if further modification to the contrast is necessary.

Troubleshooting

Error Messages

If this message displays in the printer's message window...	Do this...
`Copy Key Not Installed`	■ Check to see if the copy key is installed correctly on the printer.
`Copier Not Connected`	■ Check to see if the scanner's Ready LED is on. ■ Check the SCSI cable connection on both ends. ■ Check to see if there is a terminator at the end of the SCSI chain. ■ Make sure the SCSI port is set to 5. ■ If the scanner's Paper Jam LED is on, turn both the scanner and printer off and back on again.
`Scan Error`	■ Check to see if the scanner's Ready LED is on. ■ Check to see if there is a paper jam in the ADF. If so, clear the jam, and then turn the scanner off and back on again. ■ If the scanner's Paper Jam LED is on, turn the scanner off and beck on again.
`Not Enough Mem`	■ Check to see if the scanner's minimum memory requirement is met. ■ Change the printer's default resolution to a lower setting. ■ Increase the printer's Display List memory ■ Reduce the complexity of the copy request (for example, collation or number of copies). ■ Install more memory.

Other Problems

If this happens...	Do this...
Documents don't feed smoothly into the ADF.	■ Clean the ADF.
Edges of the copy are cut off	■ Make sure you're centering documents at the top of the scanner glass and that the scan size setting is correct. ■ Keep in mind that the size of the scanned print cannot exceed the printer's maximum imageable area for the size media being used.
Image quality of copies is not optimal.	■ Clean the scanner glass: dampen a lint-free cloth with alcohol or a mild detergent and wipe the glass clean. ■ If you're using an automatic document feeder (ADF), clean it. ■ If you're scanning at 150 dpi, some printed materials, such as magazines, cause moiré patterns. To remove these patterns, change the scan resolution to 200 or 300 dpi (choose Copier/Copy Mode/Custom Color and then Copier/Copy Mode/Custom Config/Scan Resolution/200 or 300).
Multiple copies of a multipage document in the ADF are incomplete.	■ Increase the printer's Display List memory client. » **Note:** *Refer to the "Memory" section of chapter 5, ""Additional Technical Information," of the Reference manual for more information.*
Printer is too slow	■ Reduce the printer's default resolution. For optimum performance, change the default resolution to 600 dpi. For high-speed copying, set the default resolution to 300 dpi.
Ready and Jam LEDs are blinking	■ The scanner has been turned on before the shipping bracket was removed.

If this happens...	Do this...
Scanner lamp flickers, is dim, or fails to come on	■ The scanner lamp is failing or has failed and needs to be replaced.
Several pages feed into the ADF at the same time	■ Clean the ADF.

❖

A

QMS Customer Support

In This Appendix . . .

- "Sources of Support" on page A-2
- "QMS World-wide Offices" on page A-5

Sources of Support

Several sources of help and information are available, depending on the type of help you need:

Your QMS Vendor

Your local vendor (the one from whom you bought the printer) may be best equipped to help you. Your vendor has specially trained service technicians available to answer questions, and the equipment to analyze your printer problems.

Your Application Vendor

Often, “printing” problems have more to do with the application being used than with the printer. In this case, the application manufacturer is the best source of help.

Q-FAX

Q-FAX, a QMS information retrieval service, provides application notes, technical support notes on common printing problems, and information about printer specifications, options, accessories, consumables, and prices.

In the United States and Canada, call (800) 633-7213 to reach Q-FAX. In all other countries, call (334) 633-3850. Have your fax number handy when you call (or place the call from your fax machine's handset).

You can choose to have either a directory (a list of currently available documents) or a specific document sent to you. The first time you call, request the directory (press 2 on your phone or fax keypad when prompted). Then call back to request specific documents. You can order up to three documents per call.

CompuServe

Through CompuServe, you ask general (non-technical) questions, share information with other users, and access printing information and programs. When you use CompuServe, type `go qmsprint↵` to go directly to the forum where QMS is located. The QMS library section contains application notes, printer drivers, utilities, technical information, and announcement files.

Internet

The QMS server provides access to technical reports, new product announcements, a trade show schedule, and other general information about QMS.

If you have access to the World Wide Web, you can view the QMS home page at http://www.qms.com/. The QMS ftp resource is ftp.qms.com.

QMS Customer Response Center (CRC)

You can contact the QMS Customer Response Center (CRC) in three different ways:

- **Telephone**—You can call the CRC at (334) 633-4500 (US) Monday–Friday, 7:00 am–6:00 pm, Central Time.

» **Note:** *If you call for assistance, have the following information ready so our technicians can help you more quickly:*

- ☑ Your phone number, fax number, and shipping address
- ☑ A description of the problem
- ☑ The printer model and serial number
- ☑ The type of host computer you're using
- ☑ The type and version of operating system you're using
- ☑ The interface you're using, and, if serial, the protocol (for example, XON/XOFF)
- ☑ The application and version you're using

- ☑ The emulation of the file you're printing and the emulation mode of the port
- ☑ Your printer firmware version (listed on the status/start-up pages)
- ☑ If you can print, have a status page available

- **Fax**—You can fax questions to the CRC at (334) 633-3716 (US). Provide the same information as listed above, and indicate whether you would like a faxed or a phoned reply.
- **Internet**—If you have access to the World Wide Web, you can access the CRC through the QMS home page at http://www.qms.com/

QMS World-wide Offices

QMS United States and Latin America

General Contact
1 (334) 633-4300
Fax 1 (334) 633-4866
Email info@qms.com
Internet http://www.qms.com
Information on QMS products, supplies, and accessories, and on the authorized QMS remarketer or service provider nearest you
1 (800) 523-2696

Customer Response Center (CRC)
Technical Assistance
1 (334) 633-4500 7:00 am–6:00 pm Central Time
Fax 1 (334) 633-3716
Internet http://www.qms.com

Latin America Fax
1 (334) 639-3347

National Service
Service Information, Installation, and Maintenance Pricing
1 (800) 762-8894
On-Site Service and Depot Repair Information
1 (800) 858-1597 7:00 am–7:00 pm Central Time
Spare Parts Ordering and Information
1 (334) 633-4300 x2530 8:00 am–5:00 pm Central Time

QMS Canada

General Contact
1 (514) 333-5940
Fax 1 (514) 333-5949
Supplies and Accessories 1 (800) 268-0343 x223

National Service
On-Site Service and Depot Repair Information
1 (800) 268-4969 8:30 am–7:00 pm Eastern Time
Spare Parts Ordering and Information
1 (905) 206-9234 x238 8:30 am–5:00 pm Eastern Time

QMS in Japan

General Contact
(+81)-3 3779-9600
Fax (+81)-3 3779-9650
Internet http://www.qmsj.co.jp

QMS in Latin America

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Cra 43 DD#8-42
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QMS EMEA

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